THE OIL AND GAS JOURNAL

Volume 32
Number 27

November 23, 1933

Subscription rates: 1 year, $6 (Canada and foreign, $7); 6 months, $3; 3 months, $2; current copies, 15 cents (extra copies of special numbers, 50 cents)

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December Allowable Production of Crude Oil Is Reduced to 2,210,000 Barrels Per Day

By JAMES McINTYRE

SECRETARY HAROLD L. ICKES announces that the allowable oil production in the United States in December shall be 2,210,000 bbls. per day or 128,500 bbls. per day lower than the allowable fixed by Mr. Ickes, October 1.

Oklahoma will cut 7.7 per cent; Texas, 7.05 per cent, while California fares better with a cut of only 1.1 per cent from its October allowable. Kansas is given a 3.5 per cent cut. The whole country's allowable is cut 5.5 per cent.

Mr. Ickes is of the opinion that a crude oil production in balance with demand will maintain a stabilized price for oil and its products, but the news comes out of Washington that the oil administration has got wind of a 40,000-bbl. production of "hot" oil in East Texas, and that it is preparing a militant campaign against this practice.

A 40,000-bbls. daily production of underpriced oil might well upset any program calculated to keep conditions balanced, and the government may be commended for its efforts to stop this or any other such cases.

Illicit producing in that quantity and the sale of the oil at low prices to refiners who in turn dispose of the product below the regular markets throws a lot of cheap gasoline on the market that will unsettle conditions in whatever marketing territory the "hot" oil product reaches. It is imperative that this be stopped at the source.

Mr. Ickes' idea that a lower production of crude, and a consequent lower quantity of oil run to stills, may bring about naturally the condition that would be attained artificially by fixed higher prices may work out in a way generally satisfactory to the oil industry. Some refiners may be obliged to offer premium prices for crude in the days to come and nothing stimulates the crude market like the offer of premiums. Higher crude prices will necessitate increases in gasoline prices and after all this is the consummation to be wished.

Important news comes out of the Anderson-Leon-Freestone sector in East Central Texas, the point of most interest among Mid-Continent oil men at this time. The second test for the Woodbine sand in the Long Lake area in Southwestern Anderson County appears to be dry and the big gas well on the John Carter Survey in Leon County appears to have little chance of making an oil well. The deep test for Woodbine sand production in the Simon Sanchez Survey in Freestone County, has not shown signs of oil in the deep coring it has been subjected to in the past few days.

Crude Oil Production in the United States

Estimated daily average production for the week ending November 18, and a comparison with previous week and one year ago, follows:

	Nov. 18	Nov. 11	Nov. 19, 1932
Oklahoma—			
Oklahoma City	205,615	193,825	73,830
Seminole-St. Louis	107,420	96,400	111,235
Remainder of State	209,390	208,045	202,495
Total Oklahoma	522,425	498,270	387,560
East Texas—			
Lathrop	176,863	184,468	136,662
Kilgore	128,552	134,041	106,038
Joiner	114,688	119,607	112,985
Total East Texas	420,103	438,116	355,685
West Texas	121,555	119,705	164,847
North Central Texas	81,487	81,185	72,455
Texas Panhandle	39,135	39,067	45,605
East Central Texas	43,094	43,168	49,220
Gulf Coast—Texas	155,548	155,910	120,866
Southwest Texas	48,453	39,743	58,239
Total State of Texas	909,375	916,894	866,917
Kansas	123,355	107,355	96,720
North Louisiana	25,695	25,355	29,500
Gulf Coast—Louisiana	48,245	50,555	36,395
Arkansas	32,875	32,675	33,755
Eastern Fields	122,500	125,500	123,000
Rocky Mountain area	80,520	80,390	74,286
California—			
Santa Fe Springs	39,000	44,000	56,000
Long Beach	59,500	62,250	70,000
Playa Del Rey	8,750	9,500	13,500
Elwood	12,100	12,500	13,300
Kettleman Hills	53,000	64,000	60,000
Remainder of State	291,150	287,750	256,200
Total California	463,500	480,000	469,000
Total United States	2,328,490	2,316,994	2,117,133

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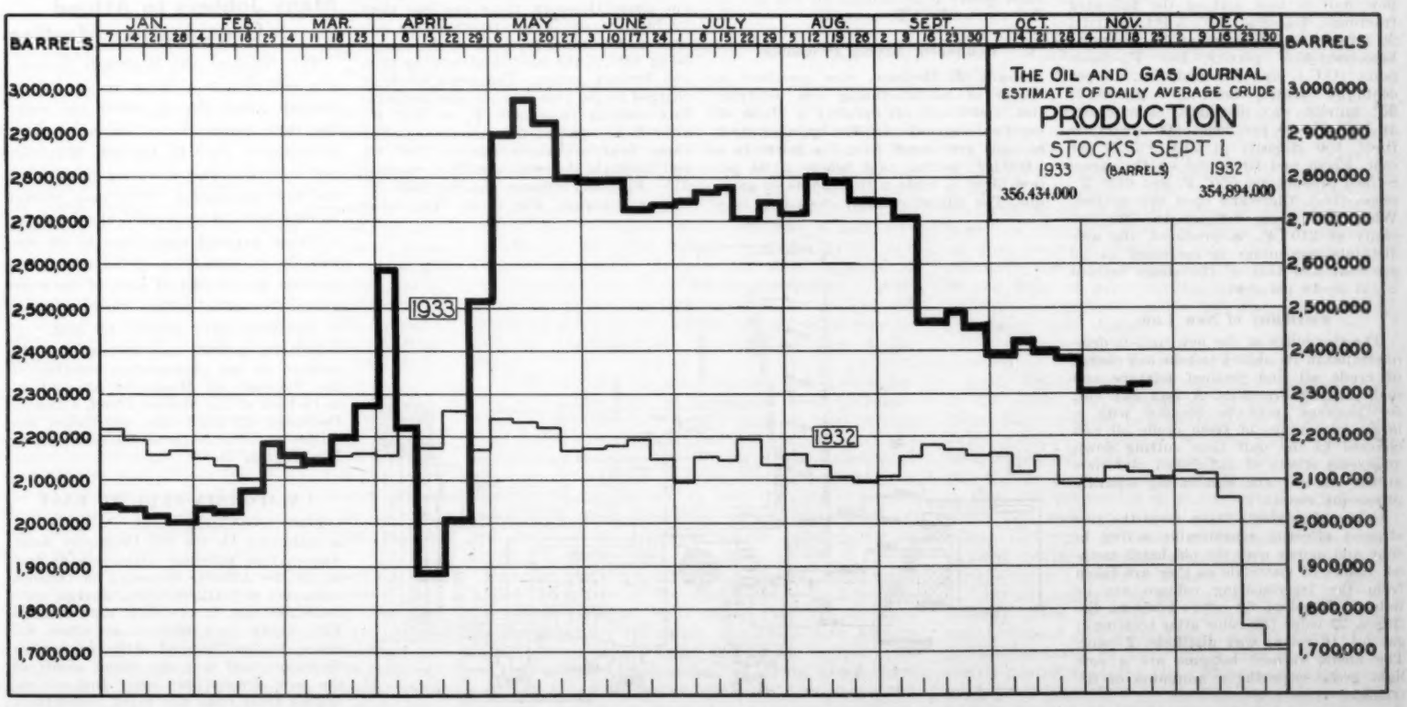


Oil Creek Refining Company Completes 1,500 Barrel Topping Unit in East Titusville Plant

By R. C. CONINE

TITUSVILLE, Pa., Nov. 20.—The 1,500-bbl. crude distillation unit just completed at their plant by Alco Products, Inc., fits perfectly in the program visualized in 1919 by the founders of Oil Creek Refining Co. at East Titusville. This installation provides for the addition of a rerun unit and other modern equipment as the necessity arises. The layout of the refinery shows that while these operators know their business too well to make a fetish of expansion, the 25-acre grounds were not acquired without definite plans for the future. Where temperature loss or increment are considerations, compactness is a feature, and where these factors are of no importance there is ample spacing making for greater safety and neatness.

The new fractionating equipment and pipe furnace have added 50 per cent to the daily capacity of the refinery while cutting the operating costs considerably. Use of steam, for instance, was reduced from 4,000 pounds per hour with the old batch stills to 700 pounds per hour in the new unit. The quantity of fuel now used ranges between 2.1 per cent and 2.5 per cent of the crude oil or crude oil-slop wax charged to the unit. The new system, naturally, with the 95-foot fractionating column, pipe furnace for the charge and superheated steam, heat exchangers, coolers, pumping equipment and the Foxboro and Brown control and indicating instruments, provides a flexibility in operations which was unthought of with the equipment which has been replaced. While the rated capacity of the unit is 1,500 bbls. daily, under certain operating conditions the throughput has approached 1,800 bbls. a day, and has not gone below 1,500 bbls. when reducing to 650 cylinder stock. Pennsylvania Grade crude oil is used exclusively.

Cuts From New Unit

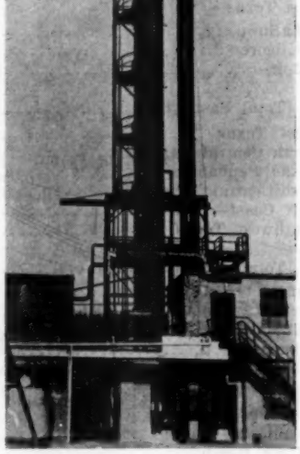
Processing a Bradford crude oil, the new unit is now making the following fractions: Gasoline, 62° A.P.I. gravity, 96 initial and 365 endpoint, 36 per cent; kerosene, 45.5° gravity, 150° F. flash-point (O.C.), and 510 endpoint, 14 per cent; 39° gravity fuel oil, 9 per cent; 35° gravity wax distillate, 82 viscosity at 100° F., 20 per cent; 600 steam refined, 150 viscosity at 210° F., 20 per cent. Flash and firepoints on the steam refined product are 550° F. and 615° F., respectively, Cleveland open cup method. When 650 steam refined, 185-190 viscosity at 210° F., is produced, the wax distillate percentage is increased to 22 per cent and that of the steam refined is cut to 18 per cent.

Flexibility of New Unit

The flexibility of the new unit is demonstrated in its ability to take any charge of crude oil and product mixture and make narrow fractions. A wax slop cut, for instance, may be blended with a larger percentage of fresh crude oil and charged to the unit thus cutting down on excess stocks of unfinished materials at the refinery and eliminating separate processing costs.

Colors of products taken from the side streams effect a considerable saving in time and money over the old batch method. Colors of materials as they are taken from the fractionating column are as follows: Gasoline, 30 color; kerosene distillate, 23 color (26 color after treating); gas oil, 16 color; wax distillate, 2 color. The steam refined bottoms are a soft light green requiring a minimum of filtering.

Close fractionating of the wax distillate cut makes it possible to pass this fraction directly to the presses where a crude scale wax of excellent quality is obtained while the pressed oil yield is



General view of new Alco topping unit just completed at the Oil Creek Refining Co.'s plant at East Titusville, Pa.

increased 1.5 per cent over the old method. The crude scale wax is sweated and percolated through clay to produce a water white material of 122-124 a.m.p. The pressed distillate goes to the batch stills where it is reduced to 180 sec. or 200 sec. at 100° F. neutrals.

Equipment Saving Provisions

Frank J. McGraw, vice president in charge of manufacturing and construction, could call his refinery a "book of practical suggestions." The cylinder stock bottoms are passed from the tower to a 2,000-bbl. mixing tank where a 50 per cent blend is made with naphtha or gasoline. The diluted cylinder stock goes to a back filter where the color is brought to 6 N.P.A. At a temperature of 100° F. it enters a working tank where the temperature is further reduced before passing to the 1,000-bbl. chiller. As the bottoms left the still at a temperature of 625° F. minimum, the heat loss is explained by the fact that in addition to the heat exchangers and cooler, an additional drop in temperature is obtained by running the bottoms into the storage tanks through lengths of perforated pipe which serve as elongated spray nozzles. The oil-naphtha blend goes to the chiller from the working tank at nearly atmospheric temperature. In the chiller, which is insulated with 8 inches of cork, the temperature is reduced to minus 30 or 40. The motors operating paddles in the working tank and chiller are situated on the roof of each tank and are electrically operated so that they can be started from the centrifuge room, thus eliminating struggles with belts on the tank scaffoldings. The thick cork insulation covers all of the cooling sections up to the Sharples super centrifuges. The centrifuges discharge into two 500-bbl. tanks, one stream being the petrolatum and diluent and the other stream, the wax free cylinder oil. The cylinder oil goes to the batch stills for removal of traces of diluent, and then to the middle filter house which it leaves as 625 material of 150 viscosity at 210° F., and 7½ to 8 color. Streams from the clay filters discharge into a metal trough when the oil in the filters reaches a certain level. The trough empties into a receiving tank. The streams are small and continuous for the useful period of the filter. It is typical of the plant that the space under the filters, which is usually strewn with clay, is perfectly clean.

Flow in Fractionating Unit

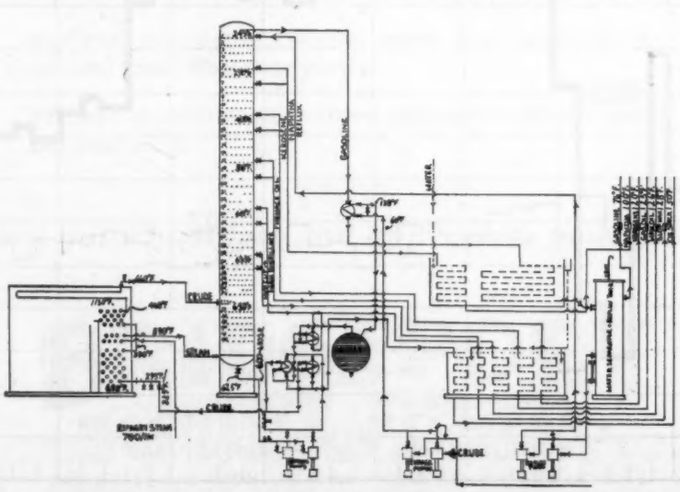
Normally there are 65 to 70 bbls. of crude oil in the distillation system at one time. However, there are less than 12 bbls. of oil in the fractionating column at any time, the bulk of the charge being held in the horizontal settling tank and furnace tubing. The fresh crude is charged to the pipe furnace at a temperature ranging from 300° F. to 325° F., after it has passed through the gasoline vapor heat exchanger against 240° F., and through the wax distillate, against 615° F., and bottoms, against 625° F. heat exchangers. The crude enters the pipe still at a pressure of 90 pounds and is charged into the flashing section of the bubble cap tray tower at a pressure of 1.25 pounds and 660° F. temperature. Superheated steam is injected in the bottom of the tower at a pressure of 17.5 pounds and temperature of 590° F. Temperatures in the furnace, which holds about 35 bbls. of the charge, range from 650° F. in the bottom of the conduction section to 1,130° F. in the radiant heat section.

Operating Temperatures

Cuts are taken at the following temperature levels in the tower: Slop wax, 635° F.; wax distillate, 615° F.; gas oil, 510 F.; kerosene, 400° F.; naphtha, 290° F.; gasoline, 265° F. (eliminating special naphtha cuts), or 243° F. Special naphthas are cut to provide a more complete line meeting requirements of regular customers. While higher gasoline yield can be obtained from the Bradford charge with this unit, operations have been adjusted for a lower yield as a measure of co-operation with other refiners in the district to reduce motor fuel stocks.

Flow and temperature relationships are under automatic control. Conditions throughout the entire system are indicated on the control room panel. Three separate provisions are made for regulation so that full operation may be continued in the unusual event of failure in part of the control equipment. Manual operation with the aid of the easily read indicators is a final resources which is readily available.

Water for the refinery is taken from Pine Creek. This water does not require treating. However, the boilers are cleaned in turn for removal of the usual organic accumulations. Water shortage is guarded against by provisions for sufficient storage and auxiliary condensers.



Flow chart showing processing of crude to cylinder stock

Many Jobbers to Attend Organization Meeting

The National Oil Marketers Association will provide a forum and a medium through which the oil jobber can make his voice heard in an organized way, according to Paul E. Hadlick, Washington attorney, who is aiding in forming the new association. "The past several months have demonstrated the need for a strong national association of oil jobbers. In the formation of the new group we have the support of most of the state associations of oil jobbers that have been in existence many years," he said.

Definite policies and by-laws will be adopted at the organization meeting of the National Oil Marketers Association, to be held at the Stevens Hotel, Chicago, December 12, 1933. The association has offices at 1389 National Press Building, Washington, D. C.

CALIFORNIA FUEL TO EAST

LOS ANGELES, Calif., Nov. 18.—It is estimated by the Oil Producers Sales Agency that off-shore shipments of fuel oil to the Atlantic Seaboard in October amounted to 1,412,089 bbls., against only 2,458,290 bbls. in preceding nine months. This heavy gain more than offset declines in Pacific and Atlantic foreign shipments and was the direct result of the new demand for coast fuel oil resulting from code and tariff restrictions on importations.

Price Control Has Been Indefinitely Postponed; Regulation of Output May Be Substitute

By ANDREW M. ROWLEY

WASHINGTON, D. C., Nov. 21.—More complete co-operation within the petroleum industry and less government control now seems apparent. Hearings on the question of minimum prices scheduled to be held here today were postponed for 15 days and will be held at that time unless a definite agreement is reached meanwhile for volumetric control or control of crude oil production and gasoline manufacture which, it is hoped, will accomplish the same objects as the establishment of minimum or cost prices by the Government.

Harold L. Ickes, Secretary of the Interior and oil administrator, has given the industry 15 days to agree on such a plan. If agreement is reached, the plan will be tried out for an additional 90 days, during which time it will be ascertained if such volumetric control will give the industry prices for crude oil and gasoline which will permit operation on a reasonably profitable basis.

Strict enforcement of all provisions of the code for the petroleum industry is the keystone of the new plan, and every effort will be made by the administration and others co-operating in the stabilization movement to see that crude oil production and gasoline manufacture are held down to consumer demands.

Crude oil allocations for December have been issued and allocations of the quantity of gasoline which may be manufactured and for gasoline inventories will be issued tomorrow, probably, with drastic regulations expected to enforce these provisions.

Briefly, the idea is to work out a plan whereby crude oil production and gasoline manufacture and inventories will be held to a level which will automatically warrant better prices, and these prices will prevail instead of having the Government set a minimum level.

Feared Government Control

Behind the whole change in program announced today is the fear upon the part of the petroleum industry of permanent government control of the business. That fear is deep seated. It caused opponents and proponents of the price control plan to get together during the past week and early this week. The result of these meetings was the postponement of the hearings on the subject and the announced intention to try to get together on a plan which would accomplish the desired object and yet eliminate the necessity of the Government fixing any prices.

Those in favor of having the Federal Government set a minimum price schedule for crude oil and refined products and those opposed to the policy of having the Government fix any prices will, during the next 15 days, try to agree on a plan of control of production of crude oil and gasoline which will stabilize the price structures at a level as high or higher than that contemplated in the tentative schedule announced by Oil Administrator Ickes which would have become effective December 1.

Constructive Move

Postponement of the hearings today is generally regarded as a most constructive move for the petroleum industry. There were wide differences of opinion on the subject and it was felt the hearings would result in a split in the industry which would serve only to emphasize reports the oil business could not get together on anything and is not capable of self-government.

Both sides of the price control question are pleased at the turn of events. No one wants government control for any period longer than the NRA provides, but disagreement within the industry on the price control question threatened to strengthen the position of those who, it is believed, would like to have the Federal Government take permanent control of the oil business. Such control would provide numerous lucrative jobs and the petroleum industry would have to foot the bill.

In this connection the petroleum industry is especially fortunate in having Secretary Ickes as oil administrator. His sole desire is to stabilize the oil business. He has no other thought or wish. Oil men are back of him 100 per cent and he holds the confidence, respect and esteem of everyone in the business who wants this industry put on its feet.

In announcing postponement of the hearings today, Secretary Ickes issued the following statement:

Ickes' Statement

"As is well known, there has been within the petroleum industry differences of opinion on the question of price control and as to schedules proposed in the event there should be price control. In other respects, there is very general agreement within the industry as to the administration of the petroleum code. Hearings were to begin this morning on the schedules proposed by the Planning and Co-ordination Committee. Just prior to the time set for the initiation of the hearings it was represented to me that certain interests within the industry opposed to price control had suggested to the Planning and Co-ordination Committee a postponement of the hearings in order that a fair test might be given to the effect of production control and the administration of other features of the code.

"I am advised by the Planning and Co-ordination Committee that it acquiesces in a postponement of the hearings for 15 days so that within this period the Planning and Co-ordination Committee may consider certain plans and suggestions of a group opposed to price control and make a further recommendation to me. If a definite plan based upon these suggestions can be worked out it will result in postponement of the hearings for 90 additional days.

"In the meantime effective control of production under the orders of the administrator will be continued. In addition it is hoped that all elements in the industry will begin at once serious efforts to reduce excess stocks of gasoline, to adjust evils in the marketing situation, to bring about harmonious operation under the code throughout the country, and at the same time give due consideration to refinery runs.

"In other words, as the matter now stands, the Planning and Co-ordination Committee, which recommended the schedule of minimum prices now before me, acquieces in this postponement with the view of considering whether or not the matters referred to might lead to a further postponement or a change in its recommendations to me.

"In view of this situation, I have directed that the hearings now be postponed for 15 days. This involves the postponement also of the effective date of my order of October 16, 1933, fixing December 1 as the tentative date on which the price schedules proposed by the Planning and Co-ordination Committee would be effective. Formal order to that effect will be made by the administrator.

"As the hearings will not begin in any event until December 5, I deem it advisable that the tentative date for putting into effect any price schedules be postponed at this time until January 1, 1934, subject to further extensions or suspension.

"All requests for statistical data which have gone forth and which have not yet been complied with should be complied with as though no postponement in the hearings had been made, except that such data may be filed on or before December 10, 1933, instead of November 25, 1933."

Gasoline to Be Allocated

The entire industry must realize present and contemplated price schedules cannot be maintained unless there is a distinct improvement in the wholesale price of gasoline. That is the big factor in the situation and every effort will be made to strengthen this price structure. Gasoline manufacture will be allocated by districts and inventories will be allocated also, and it is expected these allocations will be made in the form of an order from the Government which will give them the effect of a law so that violations may be prosecuted.

The petroleum industry is united now in efforts to accomplish three main objects—control of production of crude oil and gasoline to consumer demands; the establishment of price schedules which will permit profitable operation; and the elimination of price cutting and the sales of products below cost which practice always has disrupted the market for the whole business.

If a plan to accomplish these objects can be worked out during the next 15 days, it will be put into effect for 90 days thereafter and, if successful, the industry will carry on its own business without any prices being fixed by the Federal Government. Otherwise, those in favor of minimum prices being set by the Government will press their belief as they still feel the fixing of a minimum or cost recovery price by the Government will eliminate the evils which have beset the industry in the form of price cutting and will permit the business to get back on its feet and operate on a profitable basis quickly.

Quick Action in Texas

Quick action is promised on reports received here to the effect that production of hot oil in East Texas has increased to approximately 40,000 barrels daily. Charles Francis, of Wichita Falls, Tex., has been appointed special assistant attorney general and will be in charge of prosecutions being planned to stop this production in excess of allowables and allocations under the orders of the Federal Government. LaVergne F. Guinn of Dallas has been appointed special assistant with the attorney general for the market group in Texas.

With enforcement of provisions of the code, especially those relating to production and inventories, a most important factor now in view of efforts being made to formulate a plan to have volumetric control take the place of governmental minimum price control, it is expected especial attention will be devoted to prosecutions of violators of provisions of the code.

December Crude Oil Production to Be Cut 128,500 Barrels

WASHINGTON, D. C., Nov. 20.—Harold L. Ickes, oil administrator, today issued an order allocating crude oil production in the United States for December at 2,210,000 barrels per day.

The new allotment and the distribution as fixed by Secretary Ickes for October, and which continued until November 30, inclusive, together with the decrease by states under the new allotment, follow:

	Oct. 1	Dec. 1	Decrease
Arkansas	33,000	33,000	none
California	455,000	450,000	5,000
Kansas	116,000	112,000	4,000
Louisiana	70,000	69,300	700
Texas	965,000	888,000	77,000
Oklahoma	495,000	457,000	38,000
New Mexico	41,400	41,200	200
Rocky Mountain fields	38,900	36,300	2,600
Michigan	30,000	29,000	1,000
Other eastern states	94,200	94,200	none
Total	2,338,500	2,210,000	128,500

Lack of Knowledge by Oil Men of Stupendous Task of Administering the Petroleum Code

By ANDREW M. ROWLEY

WASHINGTON, D. C., Nov. 20.—Extensive publicity given during the past week to the subject of functions and jurisdiction of the Petroleum Administrative Board and the Planning and Co-ordination Committee, both working with Harold L. Ickes, Secretary of the Interior and oil administrator under the code for the petroleum industry, has served to create additional interest throughout the United States in the work each of these organizations is doing to stabilize conditions in the petroleum industry. It seems there has been a lack of knowledge among the rank and file of oil men in the stupendous task confronting the Government and the oil industry in administering the code of fair competition adopted by the oil business and made effective by the signature of President Roosevelt on September 13.

Many oil men seemed to feel that when the code was signed everything was settled and the oil industry could go about its business, simply reporting to Washington violations of the code and letting the Government prosecute these violators. But such is not the case. Different questions and problems are arising every day in almost every section of the country and these problems must be considered and solved and decisions made on a hundred and one questions coming up daily for action.

The Planning and Co-ordination Committee, composed of 12 oil men representing the industry and three men representing the Government, two of whom are oil men, holds a meeting here every day from 10 to 1 o'clock. In addition, members of this committee are busy before the meeting and, generally, until well on into the night, on matters relating to the different branches of the industry. Each branch of the business is represented by a chairman who has a committee working with him on particular problems relating to that division of the business. Members of these committees spend a great deal of time in Washington and are devoting every effort to clarify the situation and to stabilize conditions.

Fate of Business at Stake

If oil men throughout the nation could only realize what is being done here for them and for their best interest, the work of the Planning and Co-ordination Committee and the Petroleum Administrative Board would be simplified greatly. Petty disagreements and jealousies have no place in the picture. The fate of the entire oil business is at stake and if there ever was a time for the petroleum industry to get together in one common cause and to unite whole-heartedly with the efforts being made here in its behalf, now most certainly is the time. If they do not get together, forget past differences and realize an honest, conscientious, intelligent and sincere effort is being made to stabilize conditions, then the industry will have lost its opportunity to be regarded as selfgoverning and the only alternative is government control.

Work is piling up on the Petroleum Administrative Board, composed of government officials with Nathan R. Margold, solicitor of the Interior Department, as chairman. This work, relating to the administration of the code for the petroleum industry, is in addition to the regular functions of the different officials.

The extent of the work being done and planned by this board in administering the affairs of the petroleum industry can best be realized when it is known. The Lemon Building, a five-story structure at 1729 New York Avenue, near the Interior Department Building, has been selected as headquarters for the work of the Petroleum Administrative Board. No decision has as yet been made about the occupancy of this entire building by the board and its employes but the board believes larger quarters are absolutely necessary if it is to handle the work it feels will be placed in its hands in connection with the administration of the oil business by the Government. Part of the personnel of the board has moved into this building.

Oil Men Should Speak Up

Members of the Petroleum Administrative Board are interested greatly in their work in connection with matters relating to the petroleum industry and are desirous of procuring expressions from oil men throughout the country on the work being done. The board wants to know from oil men what oil men feel about what the Petroleum Administrative Board is doing. They say such expressions, whether favorable to actions of the board, or unfavorable, will be helpful. In other words, what is the reaction of the oil men throughout the country to the work being done by the Petroleum Administrative Board? Oil men should feel free in expressing their opinions and such opinions and expressions should be sent to Nathan R. Margold, chairman, Petroleum Administrative Board, Interior Department, Washington, D. C.

Oil men here heartily concur in the action of the Independent Petroleum Association of America taken at its annual meeting in Tulsa last week when it adopted a resolution which stated in part that the association "respectfully requests the Federal oil administrator to avail himself of the counsel and advice of the Planning and Co-ordination Committee; that he recognize this committee as the body through which the petroleum industry wishes to function as a self-governing industry and that he thus assures himself a degree of co-operation and confidence which the industry desires to offer him and which it does not believe can be obtained under any policy which seeks to impose upon the industry important measures which have not been presented to the industry's representatives for consideration and recommendation."

There is a well defined feeling here that the petroleum industry has a big problem confronting it in the matter of government control and regulation. One oil man stated: "The Government has been trying to get control of the oil business for years and now that it has the opportunity it is not going to let go without a big struggle."

Despite the fact the effective limit of the NRA, under present laws, is only two years, it is believed efforts will be made to continue this control of the oil business beyond that limit. If the oil industry is united on the subject, a solid front can be presented against any such efforts.

There should be no pussyfooting on the issue. It is a clear cut problem and one which vitally concerns every oil man in the business whether he be big or little. He should make himself heard right now and in no uncertain terms.

Comment on Chairman Margold's Statement

In this issue, The Oil and Gas Journal is glad to publish an exclusive statement given to it by Nathan R. Margold, Solicitor of the Interior Department and Chairman of the Petroleum Administrative Board. That statement has the approval of Harold L. Ickes, Secretary of the Interior and Oil Administrator.

To make the record complete in this matter, I desire to take exception to the first paragraph of the statement referred to and to similar references in succeeding paragraphs. The story on Page 9 of The Oil and Gas Journal of November 16th was prepared after I had had a 30-minute talk with Mr. Margold during which time he spoke freely. I am certain I reported that interview correctly. If Mr. Margold did not mean to ask for a direct vote of oil men on the matter relating to the Petroleum Administrative Board and the Planning and Co-ordination Committee, the impression he gave me was probably due to the unfortunate way in which he conducted the discussion.

(Signed) ANDREW M. ROWLEY.

Liason Committee Named

WASHINGTON, D. C., Nov. 21.—A liason committee has been appointed by the Planning and Co-ordination Committee under the code for the petroleum industry and the Petroleum Administrative Board to facilitate the work of the two organizations and permit closer contact between the two bodies working under Harold L. Ickes, oil administrator, for the stabilization of the oil business.

Wirt Franklin, chairman of the Planning and Co-ordination Committee; Charles F. Roeser, chairman of the production subcommittee, and Howard Bennette, chairman of the refining subcommittee, are the members of the liason committee representing the Planning and Co-ordination Committee. Mr. Franklin will be a member of this committee at all times.

Other members of the Planning and Co-ordination Committe will rotate with Mr. Roeser and Mr. Bennette as members of the liason committe from time to time, as these other members are in Washington.

Members on the liason committe representing the Petroleum Administrative Board are John W. Frey, Norman L. Meyers and E. B. Swanson.

Administrator's Report on Crude Stocks

Stocks of domestic and foreign crude oil at the close of the week ended November 11 amounted to 343,395,000 bbls., a decrease of 776,000 bbls. from the total of 344,171,000 bbls. reported for the preceding week, Harold L. Ickes, Secretary of the Interior and administrator of the code of fair competition for the petroleum industry, announced today. This decrease represents a daily average of approximately 111,000 bbls. Stocks of domestic crude oil totaled 340,944,000 bbls., a decrease of 735,000 bbls. from the total of 341,679,000 bbls. reported for the preceding week, while stocks of foreign crude oil held in the United States amounted to 2,451,000 bbls., a decrease of 41,000 bbls. from the total of 2,492,000 bbls. reported for the preceding week. Current import statistics recorded a decrease of 258,000 bbls. in receipts of foreign crude oil during the past week, as compared with the preceding week.

Current reports of the oil industry indicate that petroleum refineries during the week ended November 11 refined a daily average of 2,235,000 bbls., a decline of 25,000 bbls. from the daily average recorded for the preceding week. Despite the reduced operation of petroleum refineries, refinery and bulk terminal gasoline stocks recorded an increase of approximately 250,000 bbls.

CRUDE PETROLEUM STOCKS REPORTED BY COMPANIES HOLDING 100,000 BBLS. OR MORE

(Received and tabulated by the U. S. Bureau of Mines, Washington, D. C.)

Grade of crude oil—	Stocks held by reporting companies Nov. 4, 1933 (barrels)	Stocks held by reporting companies Nov. 11, 1933 (barrels)	Change from Nov. 4, 1933 (barrels)
Pennsylvania Grade	5,450,000	5,352,000	— 98,000
Other Appalachian, including Kentucky	1,058,000	1,102,000	+ 44,000
Lima-Northeast Indiana-Michigan	1,442,000	1,520,000	+ 78,000
Illinois-Southwest Indiana	10,972,000	11,032,000	+ 60,000
North Louisiana and Arkansas	12,060,000	11,916,000	—144,000
West Texas and Southeast New Mexico	32,397,000	32,591,000	+194,000
East Texas	47,072,000	46,124,000	—948,000
Other Mid-Continent	151,477,000	151,619,000	+142,000
Gulf Coast	16,644,000	16,624,000	— 20,000
Rocky Mountain	27,224,000	27,146,000	— 78,000
California	35,883,000	35,918,000	+ 35,000
Total domestic crude	341,679,000	340,944,000	—735,000
Foreign crude	2,492,000	2,451,000	— 41,000
Total crude	344,171,000	343,395,000	—776,000

FAIR HEARING PLEDGED

A "full and fair hearing" to all interests in the oil industry and consumers on the question of price control and the proposed minimum price schedule was repledged by Secretary of the Interior Harold L. Ickes, oil administrator, in answer to numerous telegraphic protests against hasty or ill considered action.

"In announcing the price schedule on October 16," the oil administrator said, "the right to all interests to protest against them or support them, in hearings, was pledged in good faith and will be carried out accordingly.

"There are several hundred protests and briefs received to date, both for and against the question of price control and the items contained in the schedule."

Question of When Is a Well a Stripper Prompts the Presentation of an Interesting Formula

By L. G. E. BIGNELL
Petroleum Engineering Editor

In the oil industry the term "stripper well" has been used so long that everyone thinks he knows what the term implies but if asked to give some concrete example of a stripper well and explain why it is so classed it is doubtful whether many could do so. Many men would say that wells producing less than some given amount of oil per day are to be classed as "strippers." But why the particular daily production of the well was chosen by them would be difficult to explain. Others are inclined to class all old wells of the shallow depth type as "strippers." This is probably because of the fact that these old, shallow wells are usually small producers, largely because of normal decline and perhaps neglect in the past.

Pumping wells make up the vast majority of all producers. "Pumping" might better be changed to "mechanically produced" because many wells are produced by other methods than pumping and some form of energy other than that common to the reservoir is supplied from the surface to secure the oil. It is a well known fact that it is only a matter of time until every well must be supplied with some external energy.

Empirical Formula

As the definition of a "stripper well" is somewhat of an open question and as the small wells are more than ever assuming an important place in the industry it is believed that a method devised by the evaluation department of one of the major companies to determine the classification of wells will prove of interest.

This empirical formula has been developed by reasoning, and checked by trial and error and has been found to be relatively correct and provides a means of making direct comparisons between wells, but it may not be found strictly correct for individual wells or properties. But having provided some means of making relative comparisons the final decision as to the well classification can be more readily made by the executives and production men of the company.

This formula states that when:

$$\frac{\text{Oil} \times (\%\text{ of oil} + \tfrac{1}{2}\%\text{ of water})}{D} \times$$

P = 1.5 (or less) the well is in the stripper class.

If the constant is greater than 1.5 the well is above the stripper class.

In the above formual "oil" is taken to mean the daily average barrels of oil produced by the well.

"Per cent of oil" is the relative per cent of oil to average daily total fluid production per well and is expressed as a fraction with "oil" as numerator and the "total fluid" as the denominator and reduced to a decimal or per cent.

"Per cent of water" is also expressed as a fraction with "water" in barrels as the numerator and total fluid as denominator and also reduced to a decimal or per cent. One-half of this per cent is used in the formula.

"D" equals the depth in thousands of feet. For a well 4,000 feet deep the denominator of this fraction will be 4.

"P" equals the posted price of the barrel of oil.

It is recognized that the assumed value of 1.5 may not satisfy all conditions and may be changed to a lower or higher value to suit the opinion of the user of the formula. But in any event it seems to have satisfied the conditions determined by the engineer devising the formula and seems worthy of consideration by others to determine if the general formula is of any real value in determining the relative class of a well.

Examples of Solutions

The following table gives some relative values omitting the price factor. The conditions are all assumed, but possible.

Oil	Water	Depth	Value
2	0	1,000	2.00
2	50	1,000	1.04
4	0	2,000	2.00
4	50	2,000	.98
6	0	3,000	2.00
6	50	3,000	1.10
8	0	4,000	2.00
10	0	4,000	2.50
10	10	4,000	1.87
10	40	4,000	1.50
7	0	4,000	1.75
8	10	4,000	1.44
9	25	4,000	1.42
20	350	4,000	2.65
10	90	500	11.00
10	90	1,000	5.50
10	90	2,000	2.75
10	90	3,000	1.83
10	90	4,000	1.28

To illustrate how one of the above values is secured by use of the formula take the example covering a well making 6 bbls. of oil, 50 bbls., of water, total production 56 bbls. from 3,000 feet depth.

Substituting values in the formula:

$$\frac{6 \times (6/56 + \tfrac{1}{2}\text{ of } 50/56)}{3} \quad \text{or}$$

$$\frac{6 \times (.107 + .4465)}{3} \quad \text{or}$$

$$\frac{3.323}{3} \text{ or } 1.1$$

This value 1.1 being less than 1.5 this well is regarded as a "stripper."

Actual Examples

A check by leases can be made in much the same way and the following table gives examples taken from wells and leases in various fields of Oklahoma:

Lease	Wells	Oil	Water	Well avg. Oil	Well avg. Water	Pct. water	Depth	Gravity	Price	Value
A	1	4	0	4	0	0	4,200	38	$1.04	1.03
B	1	2	1	2	1	33	4,000	36	1.00	.41
C	6	90	9	15	1½	10	2,900	36	1.00	4.91
D	7	50	24	7	3½	32	4,200	36	1.00	1.40
E	1	5	100	5	100	95	4,150	36	1.00	.63
F	7	128	379	18	54	75	3,400	40	1.08	3.54
G	7	75	1,224	10.7	175	94	2,700	39	1.06	2.23
H	8	18	1,539	2.25	193	99	2,350	40	1.08	.52
I	7	14	206	2	30	94	2,200	38	1.04	.50
J	4	12	9	3	2	43	1,800	33	.94	1.24
K	13	53	44	4	3	45	1,700	35	.98	1.77

In this table those wells showing a value greater than 1.5 are better than stripper wells, while those with values less than 1.5 are classed as "strippers."

Crude oil price is included in the second table and it is essential that this price be used in solving the formula because it will determine the classification of the well based upon price.

In using this formula it has been found that the "value" derived by its solution indicates quite closely whether the pumping costs of the well is high or not. The higher the "value" derived by the formula the lower the pumping or lifting costs at the well. This is a relative condition but an important one to the management of any company. As this formula has given good results when checked against actual known field conditions it is thought to be worthy of consideration.

The Oil and Gas Journal will be interested to receive discussions of this formula and have any others submitted for publication. It is hoped that through this medium some acceptable formula may be derived.

U.S. Administrative Board Invites Oil Men to Submit Opinions and Recommendations

Nathan R. Margold, chairman of the Petroleum Administrative Board today denied published reports that he had sought expressions from the oil industry on whether its affairs should be handled by the Planning and Co-ordination Committee or by the oil administrator and the Petroleum Administrative Board.

"Under the oil code, which has the force and effect of law, the oil administrator has definite duties and powers which he could not, even if he desired, delegate to the Planning and Co-ordination Committee or to anyone else," Mr. Margold said. "We are always glad to get expressions of opinion and information as to all available facts from anyone in the industry; but I wish to reassert that I have never sought any expression concerning whether direction of the affairs of the industry should rest with the Planning and Co-ordination Committee or with the Petroleum Administrative Board.

"In view of the harmonious relations with the Planning and Co-ordination Committee, the board desires to state publicly that never has it so much as considered the possibility of asking the oil industry to choose between it and the Planning and Co-ordination Committee.

"The Planning and Co-ordination Committee has certain limited but clearly defined powers under the code. The Petroleum Administrative Board is merely an advisory and fact-finding agency appointed by the oil administrator to assist him in the exercise of the powers conferred upon the President and by him delegated to Secretary Ickes, as oil administrator.

Underwood & Underwood, Washington, D. C.
NATHAN R. MARGOLD

"The oil administrator and the board want anyone in the industry to feel free to express his opinion to them on any matter affecting him or the industry, to enable the administrator to have as complete a picture as possible of all phases.

"A number of officials of oil companies, producers, refiners and marketers, can spare the time to come to Washington to give their views to Secretary Ickes, to the Planning and Co-ordination Committee, and to the board. These are gratefully received and appreciated.

Opinions Invited

"To those who cannot find an opportunity to come to Washington the board issues a sincere invitation to submit their opinions and recommendation by letter, telegram or telephone, and promises that these expressions will receive the same careful consideration as if presented personally.

"As I view the duties of the Petroleum Administrative Board, they are to advise the secretary, as the oil administrator, whenever requested by him in connection with his efforts to aid the industry under its National Industrial Recovery Act code, and to perform such duties as he may specifically delegate to it from time to time.

"Established by the secretary as an

(Continued on Page 14)

Report of A. P. I. Research Project Number 37 Covers Behavior of Hydrocarbon Mixtures

By B. H. SAGE, W. N. LACEY and J. G. SCHAAFSMA
California Institute of Technology, Pasadena, Calif.*

It is difficult to obtain an exact picture of the behavior of the hydrocarbons in a petroleum pool on account of the great complexity of the mixture involved. In a study of such complex mixtures it is frequently desirable to establish first the behavior and characteristics of a similar system of simple composition. A portion of the work undertaken by Research Project 37 of the American Petroleum Institute was the determination of the behavior of simple and complex hydrocarbon mixtures when under equilibrium conditions. Equilibrium conditions are established when there is no further tendency for the system to change in any other properties as long as the temperature, pressure, and quantity of each material present are kept constant. Such a state would be approached in a pool which had remained for a long time undisturbed or in which alteration had occurred very slowly.

As a part of this program it seemed advantageous to ascertain the characteristics of a simple system to such an extent that its resulting state could be predicted accurately when certain specified changes were brought about in such a manner that equilibrium was again established after the changes had been made. A simple case of a hydrocarbon mixture which might correspond to a natural-gas and petroleum mixture is that consisting of methane and propane. Various mixtures of these two costituents would be analagous to mixtures of a dry natural gas with a very high-gravity, volatile oil. This simple mixture, offering the great advantages of ease of study and ease of interpretation, has been investigated throughout the ranges of temperature and pressure most commonly found in petroleum formations.

Experimental Results

A description of the apparatus and methods employed in this work has been published recently, and will not be repeated here. Measurements were made varying systematically the temperatures from 70° F. to 190° F., the pressures from atmospheric pressure up to 3,000 pounds per square inch, and the compositions from pure propane to pure methane. The results obtained are presented in Tables 1 to 7, inclusive. The absolute accuracy of the tabulated data is considered to be as follows: temperatures to 0.18° F., pressures to 1 pound per square inch, compositions to 0.1 mol per cent, densities to 0.08 pound per cubic foot.

In Tables 1 to 5, inclusive, the state of the system under each set of conditions is indicated. "L" indicates that the system consists solely of a liquid phase; "G," entirely gas phase; "L-G," both liquid and gas present; while "R" indicates the occurrence of retrograde condensation.

Discussion of Results

Any discussion of the results can be based best upon graphs constructed from the tabulated data. A few of the numerous possible graphs have been reproduced here to illustrate the significance of the results.

Figure 1 consists of a series of curves upon a pressure-versus-temperature chart. Each solid-line curve represents the interrelation of pressure and temperature for a definite mixture of designated composition. Only four such mixtures (including the limiting case of pure propane) from the infinite number possible have been here charted. The curve for propane indicates the change of the vapor pressure of pure propane at various temperatures up to its critical point, "C." The critical point may be defined for work as that state at which the composition and

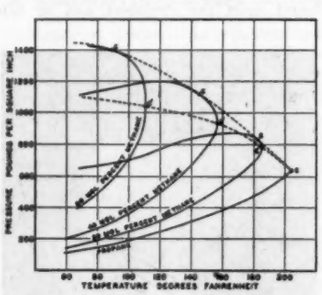


Fig. 1—Constant-composition curves on pressure vs. temperature diagram

other properties of the liquid phase and of the gaseous phase become identical and, therefore, indistinguishable. In the case of pure propane the compositions of liquid and gas phases will, of course, be identical under any conditions where they both exist, but their densities will only be the same at the critical point. Other properties, such as index of refraction, thermal conductivity, etc., will behave similarly; but attention is limited in this paper to the variables of pressure, temperature, density and composition. It will be noted in the case of a pure substance, such as propane, that the critical temperature is the maximum temperature at which both liquid and gas can coexist. Likewise, the critical pressure is the maximum pressure for the two phases in equilibrium.

From the curve for propane can be predicted the state of a system consisting of pure propane at any combination of temperature and pressure within the chart. For example, at a temperature of 140° F., liquid and gas can exist together in equilibrium only at a pressure of 312 pounds per square inch. At higher pressures the system would be entirely liquid; while at lower pressures the liquid phase would disappear, and only gas would remain.

When the system consists of a mixture of two substances, a somewhat different situation results. This may be illustrated by the curve for the mixture containing 40 mol per cent of methane and 60 mol per cent of propane. It will be seen that this curve, in distinction to the single line for pure propane, consists of a curve of two limbs meeting at the point marked "C," which is the critical point for this mixture. To illustrate the significance of this curve, consider a mixture of this specified composition at 120° F., and at a pressure of 100 pounds per square inch. Under these conditions the mixture would be entirely gaseous. If the temperature were to be held constant, but the pressure gradually increased, the graph indicates that when the pressure has reached approximately 500 pounds per square inch, liquid would first appear; which is to say that the mixture is at its dew point. As the pressure is further increased, the quantity of liquid present will increase, and the quantity in the gas phase will decrease gradually—until at a pressure of 1,200 pounds per square inch the gas phase will just disappear and the entire sample is liquefied. At higher pressures the mixture will remain entirely liquid. The area within the two limbs of the curve thus represents a range of temperature-pressure conditions under which both liquid and gas can coexist in equilibrium.

It will be noted that, in the case of such a mixture, the critical point "C" does not coincide (as in the case of pure propane) with the point of maximum temperature at which both phases may be present. This latter point, "C," has been called the cricondentherm. Similarly, it may be seen that the point of maximum pressure for coexistence of the two phases also differs from the critical point. The upper dashed-line curve shows the locus of the critical points for various mixtures, while the lower one shows the locus of the cricondentherms. As far as they are carried on this chart, the two lines diverge; but at lower temperatures they would each reach a maximum, and converge to the critical point, for pure methane.

Methane-Propane System

If it is desired to present the facts concerning the behavior of this methane-propane system at some given constant temperature, a chart such as Figure 2, for 70° F., with co-ordinates of pressure

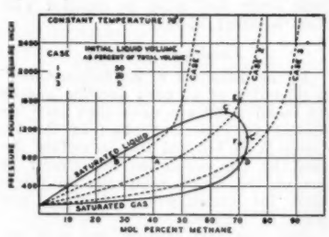


Fig. 2—Constant-temperature curve on pressure vs. composition diagram

vs. composition, may be employed. To illustrate its use, take the case of a mixture containing 40 mol per cent methane and 60 mol per cent propane, initially at a pressure of 800 pounds per square inch. Under these conditions the system would be represented on the diagram at the point marked "A" in Figure 2. The chart gives the information that both liquid and gas phases will be present, since the point lies within the loop. By tracing horizontally to the left from point "A" to the saturated-liquid line at point "B," one finds the composition of the liquid is 26 mol per cent methane. By following horizontally to the right of point "A" to the saturated-gas line at point "D," it is found that the gas phase in equilibrium with this liquid contains 71.5 mol per cent methane. The fraction of the total mols of mixture which is present in the form of liquid is given by dividing the length of the line "AD" by the length of the line "BD." Likewise, the fraction of the whole which is present as gas is given by:

$$\frac{AB}{BD}$$

Three dashed-line curves have been plotted in Figure 2 passing across the loop. These curves illustrate the behavior of this system at 70° F. during a process corresponding in a general way

American Petroleum Institute Research Project 37

This project has as its objective the accumulation of facts concerning the behavior of hydrocarbons underground. Two types of studies are being carried out. One relates to determination of the extent to which the natural-gas hydrocarbons can be dissolved in liquid oils under conditions of temperature and pressure such as those prevailing in petroleum pools, and to measurement of the changes in volume, gravity, and viscosity of the liquid which result from the presence of these dissolved materials. The other type of investigation concerns itself with the rate at which gas, pumped back into the formation during repressuring operations, can be expected to go into solution in the oil and bring about the resulting advantageous changes of properties.

Several years were required to develop the methods for this research and to construct and test the necessary apparatus. The project was begun in 1927, and since that time there have been from two to four half-time research men at work. This equipment is capable of producing a large amount of information useful to the petroleum industry.

Two progress reports pertaining to the work of this project have been given at previous meetings of the Institute, one describing experiments on rates of solution, presented at Dallas in 1931, published in *Production Bulletin No. 207;* and the other on practical benefits of pressure maintenance on petroleum production, presented at Houston in 1932, published in *Production Bulletin No. 210.* A paper on "The Heat of Immersion of Silica Gel in Various Petroleum Substances" was published in the *Journal of the American Chemical Society,* March 1932. A description of the apparatus and method used in measurements of viscosity at higher pressures was presented in *Industrial and Engineering Chemistry,* Analytical Edition, for July 1933. A discussion of methods employed in the studies of the rate of solution of gases will be found in *Industrial and Engineering Chemistry* for October 1933. Two additional papers will be published very shortly. One describes the apparatus and methods utilized in the equilibrium studies of the solubility type. The other presents data similar to those of the present paper in metric units, and discusses them from a different point of view. It is expected that further results of these investigations will be published as soon as they become available.

*Before A.P.I., Chicago.
Author's title, "Behavior of Hydrocarbon Mixtures Illustrated by a Simple Case."

to equilibrium repressuring of oil sand without production. Taking the curve for Case 1 at its left-hand end, the material present in the formation consists of pure propane, corresponding to oil with no dissolved gas; and the case is chosen in which 50 per cent of the total free space is filled with oil at its own vapor pressure. Next methane, corresponding to dry natural gas, is gradually pumped into the formation—equilibrium being maintained at all times. As the methane is pumped in, the pressure will increase—both gas and liquid phases being present—until the pressure reaches 1,240 pounds per square inch, at which pressure the formation becomes completely filled with liquid. Any further methane which can be added is in solution in the liquid, no gas phase being present.

If a similar process were to be carried out starting with the formation space only 20 per cent filled with liquid propane at the start, the system would follow the behavior predicted by the curve for Case 2. Both liquid and gas phases would be present up to a pressure of 1,410 pounds per square inch, after which the liquid would no longer be present. The entire space of the formation would be filled with a dense gas. If methane were added until the pressure reached 1,600 pounds per square inch, the state of the system would be represented by point "E," with a composition corresponding to approximately 70 mol per cent methane. If a portion of this gas were removed from the formation, being kept at 70° F., but expanded to a pressure of 1,000 pounds per square inch, corresponding to release of pressure at the surface in a high-pressure trap, the sample would now be in a condition corresponding to point "F," some liquid having separated out in the trap, since "F" lies within the loop. This type of liquid formation upon lowering of pressure is called "retrograde condensation." It is not possible, without further investigation, to predict to what extent this will occur in complex mixtures; but it is known that the range in which retrograde condensation occurs increases as the difference between the critical temperatures of the constituents increases.

Constant-Temperature Curve

The formation of a liquid condensate from a gas is, of course, greatly enhanced by a lowering of temperature, such as

TABLE 1—DENSITIES OF MIXTURES OF METHANE AND PROPANE AT 70° F.
(Compositions expressed in mol per cent methane; densities in lbs. per cu. ft.)

Pressure (lbs. per sq. in.)—	20.0 mol % Density	20.0 mol % State	30.0 mol % Density	30.0 mol % State	40.0 mol % Density	40.0 mol % State	50.0 mol % Density	50.0 mol % State	60.0 mol % Density	60.0 mol % State	70.0 mol % Density	70.0 mol % State	80.0 mol % Density	80.0 mol % State	90.0 mol % Density	90.0 mol % State
200	2.55	L+G	1.59	L+G	1.26	G	1.15	G	1.00	G	0.87	G	0.77	G	0.69	G
400	12.07	L+G	6.57	L+G	4.41	L+G	3.13	L+G	2.29	G	1.88	G	1.64	G	1.39	G
600	24.31	L+G	13.56	L+G	8.59	L+G	5.89	L+G	4.31	L+G	3.23	G	2.63	G	2.17	G
800	28.66	L	21.87	L+G	13.68	L+G	9.20	L+G	6.57	L+G	4.91	R	3.79	G	3.03	G
1,000	....	....	26.46	L	19.89	L+G	13.04	L+G	9.22	L+G	6.75	R	5.08	G	3.98	G
1,200	....	....	..	....	23.98	L	17.90	L+G	12.46	L+G	8.82	R	6.45	G	4.95	G
1,400	....	....	....	....	24.68	L	21.04	L	16.35	L+G	11.30	G	8.01	G	5.96	G
1,800	....	....	....	....	25.59	L	22.81	L	19.12	L	14.78	G	10.93	G	8.08	G
2,200	....	....	....	....	26.25	L	23.89	L	20.82	L	17.09	G	13.83	G	10.02	G
2,600	....	....	....	....	26.87	L	24.73	L	22.06	L	18.65	G	15.14	G	11.75	G
3,000	....	....	....	....	27.40	L	25.41	L	22.97	L	19.86	G	16.64	G	13.30	G

TABLE 2—DENSITIES OF MIXTURES OF METHANE AND PROPANE AT 100° F.
(Compositions expressed in mol per cent methane; densities in lbs. per cu. ft.)

Pressure (lbs. per sq. in.)—	20.0 mol % Density	20.0 mol % State	30.0 mol % Density	30.0 mol % State	40.0 mol % Density	40.0 mol % State	50.0 mol % Density	50.0 mol % State	60.0 mol % Density	60.0 mol % State	70.0 mol % Density	70.0 mol % State	80.0 mol % Density	80.0 mol % State	90.0 mol % Density	90.0 mol % State
200	1.56	G	1.37	G	1.24	G	1.08	G	0.97	G	0.82	G	0.75	G	0.64	G
400	3.19	L+G	4.56	L+G	3.19	L+G	2.43	G	2.08	G	1.77	G	1.52	G	1.29	G
600	18.33	L+G	9.98	L+G	6.64	L+G	4.67	L+G	3.59	G	2.91	G	2.40	G	2.02	G
800	26.62	L	17.09	L+G	10.59	L+G	7.37	L+G	5.42	R	4.23	G	3.43	G	2.81	G
1,000	26.99	L	24.25	L	15.51	L+G	10.42	L+G	7.60	R	5.71	G	4.53	G	3.65	G
1,200	....	....	24.97	L	21.32	L	14.14	L+G	9.99	R	7.40	G	5.69	G	4.45	G
1,400	....	....	25.49	L	22.48	L	17.92	L	12.79	G	9.12	G	6.94	G	5.37	G
1,800	....	....	26.34	L	23.86	L	20.35	L	16.25	G	12.32	G	9.41	G	7.19	G
2,200	....	....	27.03	L	24.85	L	21.84	L	18.43	G	14.86	G	11.55	G	8.91	G
2,600	....	....	27.60	L	25.66	L	22.93	L	19.78	G	16.60	G	13.35	G	10.52	G
3,000	....	....	28.01	L	26.22	L	23.66	L	20.84	G	17.59	G	14.68	G	11.79	G

TABLE 3—DENSITIES OF MIXTURES OF METHANE AND PROPANE AT 130° F.
(Compositions expressed in mol per cent methane; densities in lbs. per cu. ft.)

Pressure (lbs. per sq. in.)—	20.0 mol % Density	20.0 mol % State	30.0 mol % Density	30.0 mol % State	40.0 mol % Density	40.0 mol % State	50.0 mol % Density	50.0 mol % State	60.0 mol % Density	60.0 mol % State	70.0 mol % Density	70.0 mol % State	80.0 mol % Density	80.0 mol % State	90.0 mol % Density	90.0 mol % State
200	1.44	G	1.28	G	1.14	G	1.03	G	0.92	G	0.81	G	0.70	G	0.62	G
400	4.06	L+G	2.82	G	2.47	G	2.18	G	1.90	G	1.65	G	1.44	G	1.22	G
600	12.45	L+G	6.92	L+G	4.45	L+G	3.61	G	3.07	G	2.61	G	2.24	G	1.87	G
800	22.52	L+G	12.42	L+G	8.02	L+G	5.63	R	4.51	G	3.68	G	3.07	G	2.56	G
1,000	24.32	L	19.05	L+G	11.87	L+G	8.23	R	6.20	G	4.93	G	3.98	G	3.28	G
1,200	24.96	L	21.85	L	16.40	L	11.06	G	8.01	G	6.23	G	4.98	G	4.03	G
1,400	....	....	22.92	L	18.66	L	13.77	G	9.93	G	7.55	G	5.99	G	4.80	G
1,800	....	....	24.15	L	21.29	L	17.50	G	13.56	G	10.31	G	8.08	G	6.35	G
2,200	....	....	25.06	L	22.77	L	19.62	G	16.06	G	12.72	G	10.04	G	7.90	G
2,600	....	....	25.84	L	23.78	L	21.07	G	17.92	G	14.73	G	11.81	G	9.36	G
3,000	....	....	26.52	L	24.60	L	22.22	G	19.34	G	16.23	G	13.26	G	10.66	G

TABLE 4—DENSITIES OF MIXTURES OF METHANE AND PROPANE AT 160° F.
(Compositions expressed in mol per cent methane; densities in lbs. per cu. ft.)

Pressure (lbs. per sq. in.)—	20.0 mol % Density	20.0 mol % State	30.0 mol % Density	30.0 mol % State	40.0 mol % Density	40.0 mol % State	50.0 mol % Density	50.0 mol % State	60.0 mol % Density	60.0 mol % State	70.0 mol % Density	70.0 mol % State	80.0 mol % Density	80.0 mol % State	90.0 mol % Density	90.0 mol % State
200	1.37	G	1.20	G	1.12	G	1.00	G	0.91	G	0.80	G	0.67	G	0.58	G
400	3.03	G	2.60	G	2.32	G	2.06	G	1.82	G	1.57	G	1.34	G	1.15	G
600	6.91	L+G	4.51	G	3.61	G	3.27	G	2.82	G	2.41	G	2.07	G	1.74	G
800	15.14	L+G	8.49	L+G	5.79	G	4.69	G	3.96	G	3.34	G	2.82	G	2.37	G
1,000	20.72	L	13.81	L+G	8.99	G	6.49	G	5.21	G	4.35	G	3.65	G	3.03	G
1,200	22.02	L	17.79	L	12.48	G	8.72	G	6.65	G	5.43	G	4.49	G	3.71	G
1,400	22.75	L	19.73	L	15.29	G	11.21	G	8.25	G	6.57	G	5.38	G	4.40	G
1,800	....	....	21.71	L	18.63	G	14.95	G	11.50	G	8.93	G	7.22	G	5.81	G
2,200	....	....	....	....	20.65	G	17.53	G	14.16	G	11.31	G	9.05	G	7.23	G
2,600	....	....	....	....	22.02	G	19.39	G	16.06	G	13.25	G	10.74	G	8.60	G
3,000	....	....	....	....	23.09	G	20.74	G	17.55	G	14.81	G	12.10	G	9.81	G

TABLE 5—DENSITIES OF MIXTURES OF METHANE AND PROPANE AT 190° F.
(Compositions expressed in mol per cent methane; densities in lbs. per cu. ft.)

Pressure (lbs. per sq. in.)—	20.0 mol % Density	20.0 mol % State	30.0 mol % Density	30.0 mol % State	40.0 mol % Density	40.0 mol % State	50.0 mol % Density	50.0 mol % State	60.0 mol % Density	60.0 mol % State	70.0 mol % Density	70.0 mol % State	80.0 mol % Density	80.0 mol % State	90.0 mol % Density	90.0 mol % State
200	1.31	G	1.17	G	1.06	G	0.94	G	0.84	G	0.75	G	0.67	G	0.56	G
400	3.03	G	2.55	G	2.29	G	2.00	G	1.76	G	1.51	G	1.36	G	1.14	G
600	5.31	G	4.25	G	3.63	G	3.13	G	2.73	G	2.34	G	2.03	G	1.73	G
800	8.91	G	6.39	G	5.14	G	4.34	G	3.71	G	3.20	G	2.73	G	2.31	G
1,000	15.23	G	9.69	G	7.18	G	5.84	G	4.85	G	4.09	G	3.43	G	2.88	G
1,200	18.69	G	13.60	G	9.56	G	7.50	G	6.13	G	5.09	G	4.24	G	3.52	G
1,400	20.34	G	16.23	G	12.20	G	9.27	G	7.43	G	6.11	G	5.06	G	4.18	G
1,800	....	....	19.51	G	16.09	G	12.73	G	10.05	G	8.19	G	6.76	G	5.52	G
2,200	....	....	....	....	18.43	G	15.30	G	12.44	G	10.11	G	8.36	G	6.79	G
2,600	....	....	....	....	20.11	G	17.22	G	14.32	G	11.87	G	9.84	G	8.06	G
3,000	....	....	....	....	21.33	G	18.63	G	15.71	G	13.42	G	11.08	G	9.09	G

TABLE 6—COMPOSITIONS AND DENSITIES OF SATURATED LIQUID AND SATURATED GAS

Pressure (lbs. per. sq. in.)—	70° F. Composition (Mol % methane) Gas	70° F. Composition (Mol % methane) Liquid	70° F. Density (Lbs. per cu. ft.) Gas	70° F. Density (Lbs. per cu. ft.) Liquid	100° F. Composition (Mol % methane) Gas	100° F. Composition (Mol % methane) Liquid	100° F. Density (Lbs. per cu. ft.) Gas	100° F. Density (Lbs. per cu. ft.) Liquid	130° F. Composition (Mol % methane) Gas	130° F. Composition (Mol % methane) Liquid	130° F. Density (Lbs. per cu. ft.) Gas	130° F. Density (Lbs. per cu. ft.) Liquid
200	31.9	2.5	1.40	30.90	4.3	0.3	1.77	29.54	...	...	....	....
300	50.3	...	....	....	31.2	...	....	....	6.4	0.7	2.62	....
400	58.9	9.9	2.37	30.03	43.9	8.0	2.80	28.43	25.0	4.1	3.08	26.87
500	64.1	...	....	....	51.6	...	....	....	34.9	...	....	....
600	67.5	17.8	3.46	28.81	56.5	16.0	3.93	27.09	41.4	11.5	4.24	25.43
700	69.9	...	....	....	59.7	...	....	....	46.1	...	....	....
800	71.5	26.1	4.71	27.18	61.9	23.9	5.17	25.48	49.6	19.5	5.57	23.59
900	72.5	...	....	....	63.3	...	....	....	51.7	...	....	....
1,000	73.0	34.8	6.21	25.04	64.1	32.1	6.71	23.48	52.5	28.0	7.57	21.02
1,100	73.2	...	....	....	64.1	...	....	....	52.1	33.0	....	....
1,200	72.8	44.7	8.06	22.06	63.5	41.2	8.96	20.61	49.2	41.2	11.80	18.29
1,300	71.7	50.5	....	....	62.0	48.0	10.64	18.04	...	...	....	....
1,400	69.3	58.5	11.57	16.98	...	...	....	....	...	...	....	....

TABLE 6 (Continued)

Pressure (lbs. per sq. in.)—	160° F Composition (Mol % methane) Gas	160° F Composition (Mol % methane) Liquid	160° F Density (Lbs. per cu. ft.) Gas	160° F Density (Lbs. per cu. ft.) Liquid	190° F Composition (Mol % methane) Gas	190° F Composition (Mol % methane) Liquid	190° F Density (Lbs. per cu. ft.) Gas	190° F Density (Lbs. per cu. ft.) Liquid
400	2.3	0.6	3.87	25.21	...	...	...	....
500	16.0	...	....	....	...	...	...	....
600	24.9	8.2	5.06	23.57	8.2	3.3	7.57	21.08
700	30.8	...	....	....	14.6	8.9	8.66	18.82
800	35.3	16.6	6.81	20.92	...	...	...	....
900	37.9	21.5	....	....	...	...	...	....
1,000	36.1	29.7	11.11	14.45	...	...	...	....

TABLE 7—CRITICAL AND CRICONDENTHERM DATA

Composition (mol per cent methane)—	Critical Temperature (deg. F)	Critical Pressure (lbs. per sq. in.)	Critical Density (lbs. per cu. ft.)	Cricondentherm Temperature (deg. F.)	Cricondentherm Pressure (lbs. per sq. in.)	Cricondentherm Density (lbs. per cu. ft.)
0	*204.1	*626	†10.05	*204.1	*636	†16.05
10.0	195.0	720	10.49	195.4	705	9.67
20.0	183.0	827	11.05	185.2	783	9.24
30.0	165.9	968	11.73	172.6	864	8.80
40.0	144.9	1,120	12.55	156.6	932	8.30
50.0	119.8	1,267	13.29	136.2	987	7.74
60.0	89.4	1,402	13.98	110.3	1,040	7.34
70.0	†50.7	1,468	†14.36	80.2	1,088	7.11

*From Circular No. 279, the U. S. Bureau of Standards. †Extrapolated.

would normally occur in the passage of gas from the formation to a trap at the surface. Under these conditions it would be possible to produce a light oil in the trap—even though conditions of retrograde condensation did not exist in the formation. This is best illustrated by reference to Figure 3, which is similar

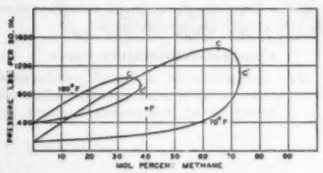


Fig. 3—Two constant-temperature curves on a pressure vs. composition diagram

to Figure 2, except that loops are shown for two different temperatures. As an example, consider a mixture of 40 mol per cent methane and 60 mol per cent propane at a pressure of 600 pounds per square inch and a temperature of 160° F. This condition is shown in Figure 3 as point "P"; and the mixture will be in the form of a gas, being outside the 160° F. loop on the gas side. If this gas were to be cooled to 70° F., liquid would appear, since the point "P" lies within the loop for 70° F. At this temperature the pressure could be lowered markedly and still have liquid in the trap. These two types of liquid formation, upon lowering of pressure and of temperature, possibly account for some of the high-gravity, light-colored oils found in a number of cases in high-pressure fields.

In Case 3 of Figure 2, with only 5 per cent of the total volume filled with liquid at the start, the liquid phase would disappear at a much lower pressure than was required for the second case. If sufficient methane were pumped in to cause disappearance of the liquid, the resulting gas would not show retrograde condensation upon expansion to lower pressure.

It is interesting to follow the volumes of liquid present in the three cases discussed. Figure 4 shows the changes in

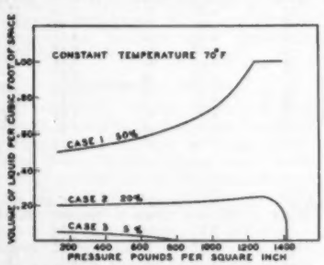

CONSTANT TEMPERATURE 70°F
CASE 1 50%
CASE 2 20%
CASE 3 5%
VOLUME OF LIQUID PER CUBIC FOOT OF SPACE
PRESSURE POUNDS PER SQUARE INCH

Fig. 4—Changes in volume of liquid phase for cases illustrated in Fig. 2

liquid volume in each case. When the formation was 50 per cent liquid-filled at the start, the volume of liquid increased more and more rapidly as more methane was pumped in, until the space was filled with liquid. In the second case there was only a very slight increase in oil volume up to 1,300 pounds per square inch, after which the liquid very rapidly disappeared upon addition of further methane. In the third case the volume of liquid decreased from the beginning of the process.

This disappearance of liquid upon addition of another constituent in gas form indicates that in repressuring it might be expected that a partial transfer of some of the more volatile constituents of the oil to the gas phase would occur. That this is the case in the methane-propane system is shown in Figure 5, which shows the increase of propane present in the gas space as methane is pumped in—causing an increase in total pressure. It will be seen in this system that the amount of propane in the gas space may be seven or eight times that corresponding to the vapor pressure of pure propane at the same temperature. A similar transfer of liquid constituents to the gas phase has been found under certain conditions with natural gas and crude oil.

An interesting phenomenon is indicated by reference to Figure 2. If one starts with a gaseous mixture of 70 mol per cent methane and 30 mol per cent propane at 70° F. and atmospheric pressure, and proceeds to compress the gas at constant temperature, liquid will begin to form at a pressure of 700 pounds per square inch. As the pressure is increased the amount of liquid present will increase to a maximum at 1,100 pounds per square inch and then decrease again. At a pressure of 1,350 pounds per square inch the last of the liquid will disappear, and only a gas phase remain.

Density Curves

A record of the densities of methane-propane mixtures at 70° F. is given in Figure 6 for all pressures within the range studied. Point "A" gives the density of pure liquid propane at 70° F. and

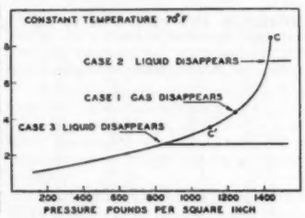

CONSTANT TEMPERATURE 70°F
CASE 2 LIQUID DISAPPEARS
CASE 1 GAS DISAPPEARS
CASE 3 LIQUID DISAPPEARS
LBS. PROPANE PER CU.FT OF GAS PHASE
PRESSURE POUNDS PER SQUARE INCH

Fig. 5—Propane content of gas space as related to total pressure

its vapor pressure; while point "B" (also at the same vapor pressure) shows the density of the propane gas in contact with the liquid. As the pressure is increased by pumping methane into the system, the solid line "AC" shows that the density of the liquid decreases, while that of the gas increases along solid line "BC"—the two densities finally becoming equal at the critical pressure "C" for this particular temperature of 70° F. At higher pressures two phases could no longer be present together.

A series of dashed lines is given to show the relation of composition to position on this digram. Pure methane shows densities which lie below the saturated-gas curve "BC" at all pressures, indicating that no liquid will form on compression at this temperature. This is also true for the case of a mixture consisting of 80 mol per cent methane and 20 mol per cent propane. Any mixture whose composition and pressure will be indicated by a point within the area "ACC'B" will consist of both liquid and gas phases at 70° F., the average density of the mixture as a whole being given by the corresponding ordinate. The density of the liquid will be that shown by the ordinate of the point on line "AC"

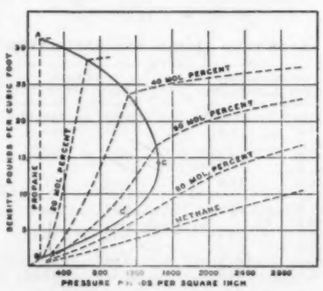


Fig. 6—Densities of methane-propane mixtures at 70 deg. F

corresponding to the existing pressure, while the ordinate of the point on line "BC" at the same pressure will indicate the density of the gas. Since the density of each of the phases and that of the whole mixture is known, the relative volumes of the gas and liquid may be easily calculated. Any point lying above the line "AC" indicates a system completely filled with liquid, no gas being present.

Figure 7 serves to illustrate another type of information obtainable from the tabulated data. It shows, for a temperature of 70° F., the compressibilities of

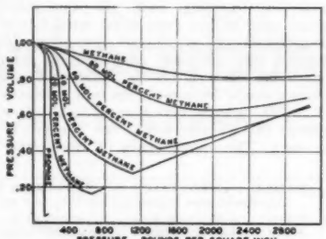


Fig. 7—Compressibilities of methane-propane mixtures at 70 deg. F

several different mixtures of methane and propane at higher pressures compared to their pressure-volume product for 1 atmosphere and 70° F. The behavior of a perfect gas would be represented on this chart as a horizontal straight line at an ordinate of 1.0. The curves for pure methane and pure propane (0 per cent methane) were drawn from untabulated data obtained in this work which agreed closely with similar data already available in the literature. The sharp breaks in some of the curves indicate the disappearance of the gas phase, the system being entirely liquid.

The graphs shown here are not the only ones which can be constructed from the tabulated data. They were chosen for purposes of illustration primarily.

It must be recognized that the methane-propane system does not offer a solution to the complex natural-gas—crude-oil problem. It does, however, indicate qualitatively the types of phenomena likely to be encountered in a study of the more complex system; and, if considered with sufficient reservations, may prove useful to the petroleum engineer in his search for a picture of occurrences underground.

Acknowledgment

The authors wish to acknowledge the financial assistance and cordial co-operation of the American Petroleum Institute, which have made this study possible.

R. W. Gallagher Elected S. O. New Jersey Director

NEW YORK, Nov. 20.—R. W. Gallagher, president of the East Ohio Gas Co. with headquarters in Cleveland, Ohio, has been elected a director of the Standard Oil Co. of New Jersey. He will move his offices to this city and will be in general charge of the natural gas interests of the New Jersey company.

Mr. Gallagher joined the Standard organization in 1896. He has held various executive positions with the subsidiary companies and in 1926 was made president of the East Ohio Gas Co. As head of the natural gas operations of the New Jersey company, Mr. Gallagher will succeed Christy Payne recently elected vice president and treasurer of the parent company.

DEATH OF C. K. O'HARA

AKRON, Ohio, Nov. 18.—C. K. O'Hara, pioneer oil operator, died here yesterday at the age of 75 years. He had been in the oil business since 1877, when he operated in the Bradford Field in Pennsylvania.

He had the distinction of having opened a number of oil pools in the Eastern Field and in the Duncan district in Oklahoma.

Mr. O'Hara, very early in his experience as an oil man, began the careful study of sands, dry, water, oil and gas, and he held to the theory that synclines held much oil that was overlooked by geologists and operators who were always seeking "highs."

Mrs. O'Hara survives, together with one son, Earl A. O'Hara, and two daughters, Miss Rosalind O'Hara and Mrs. Edith Ratdorff, all of Akron.

Administrative Board Invites Recommendations

(Continued from Page 11)

advisory and fact-finding organization, the board has sought to serve impartially and without prejudice in assisting the oil administrator and the industry to bring about stability instead of uncertainty.

"The board functions as an unbiased agency to consider any matters referred to it by the oil administrator, including recommendations from the industry submitted to the administrator by the Planning and Co-ordination Committee or independently by companies or others.

"Our duties thus necessarily must be to obtain factual data desired by the oil administrator, through investigation, hearings and other steps by which information may be gathered relative to whatever he may have under advisement. These facts are considered by the board from every available angle.

"In view of the ramification and complications of the oil industry, often referred to as the second largest business of the nation, the board will deeply appreciate any and all expressions of opinion and suggestions that may be received from persons throughout the industry and from consumers.

Fairness to All

"Our desire is to assure fairness to all interests and that we may have the opinions of as many as possible is exemplified in our hearing on the price schedule, which opened this week.

"As is possible with reference to all matters of judgment, we may make mistakes. If so, these will be adjusted as quickly as error is shown, with the hope that everything can be accomplished as fairly and equitably as may be humanly possible.

"From time to time, there may be conflicts of opinion on subjects that might arise. A common saying among oil men is that 'if you were to put 1,000 oil men in a room and ask them a question, you would get 1,000 answers.' That independence of thought is to be commended and should be preserved. We want to know each one of those opinions.

"Our problem is to work with the industry to bring about a majority of benefits for the majority of the industry, its hundreds of thousands of employes, and the millions of consumers, and to seek with that to preserve a precious natural resource for its fullest realization."

Division of California Allowable Production

WASHINGTON, D. C., Nov. 20.—Approval of a lease and field division of California's allowable oil production, but only for November, has been announced by Secretary Ickes, oil administrator. The division of the 455,000 bbls. daily allotted to California for the month was recommended to the secretary by the central proration committee of California oil producers. Administrative officials explained that this does not imply any approval of a proposed supplemental code for California or a proposed provision in that code to establish a formula for dividing the allocation on the basis of the acreage of fields, potential capacity, depth of wells or water damage to wells.

"The order contains no final approval of this formula for dividing the state allowable, which is now being carefully investigated by the oil administrator. Special attention is being paid to the protests filed by various California producers over this method of division."

R. E. Allen, secretary of the central proration committee, notified Secretary Ickes that the committee voted 20 to 2 in favor of recommending the division of daily production by fields, with the total 442,780 bbls.

Summary of Factors Causing Formation of Carbon Deposits in Internal Combustion Engines

By W. A. GRUSE
Senior Fellow, Mellon Institute of Industrial Research*

The formation and accumulation of carbonaceous deposits in internal combustion engines may be attributed to the following factors:

(A) Influences which are constant for the engine at any given time. In the main these are:

1. Those due to features in the design of the engine and the details of its construction, and
2. Those due to the condition of the engine, including, for example, the fit of piston rings, and the time of operation since previous cleaning.

(B) Influences dependent on the circumstances of operation, principally:

1. Temperature, speed and load.
2. Air-fuel mixture ratio, and
3. Dust in air taken in.

(C) Influences dependent on materials supplied, which are:

1. Fuel, and
2. Lubricating oil.

The significance of the factors listed under A and B have been discussed for gasoline engines in a recent paper by the author[1] and will not be considered here.

If the matter under C is analyzed further, it will be seen that subdivision is possible, as follows:

1. Fuel.
(a) Volatility.
(b) Chemical composition.
(c) Gum.
2. Lubricating oil.
(a) Content of resins and asphaltenes.
(b) Oxidizing tendency (to resins, etc.).
(c) Choking tendency.
(d) Volatility.

The formation of coke deposits in Diesel engines and air compressors has not received the careful attention that has been given the corresponding phenomena in gasoline engines. In air compressors (disregarding dust drawn in with the air) the lubricating oil alone can be responsible, and oxidation of this oil in the compression space is more likely to be important than is possible for either gasoline or Diesel engines. With Diesels, coke from the lubricating oil is supplemented by deposits from the fuel; the viscosity and high boiling points of the heavier oils make poor distribution and incomplete combustion of the fuel much more probable than for the less viscous and more volatile gasoline. In the absence of an adequate body of reliable experimental data on the above factors, this discussion is limited to the deposits in gasoline.

1. Fuel

There is a widespread popular impression that gasoline may have a signifcant influence on carbon deposits in engines. This point has been investigated in the author's laboratory[2] with the following results:

(a) Volatility.—With all conditions, including air-fuel mixture ratio constant, it was observed that a wide variation in the volatility of the motor fuel caused no appreciable change in carbon deposited. This was found to be true for fuels ranging from a natural gas composed of 90 per cent methane and 10 per cent ethane, through casinghead gasoline and several blends to a commercial motor fuel of 437° F. (225° C.) endpoint. With materials high boiling enough to be outside the class of marketable petrols, considerable increases in deposit were noted. Thus the motor gasoline tested left 8.3 g.m. of deposit per liter of oil consumed, while a cleaner's naphtha (b.p. 250° to 400° F.; 121° to 204° C.) and a kerosene each left 14 g.m. per liter of oil.

(b) Chemical Composition.—With constant conditions, as above, a considerable variation in the proportion of naphthenic, paraffinic and olefinic hydrocarbons in the gasolines used was found to exert no influence on deposits; an admixture of 40 per cent of commercial benzol caused a very slight increase in the deposit, which was, however, somewhat softer and more soot-like.

(c) Gum Content.—The significance of gum as influencing engine carbon deposits has been the subject of an investigation by the author[3] which served to show that gum content contributed appreciably to carbon deposit when the intake mixture was not heated. Thus under constant conditions a gasoline containing 3 m.g. gum/100 c.c. (preformed gum, steam oven method) left a deposit of 1.2 g.m., but one of 35 m.g. gum content left 3.5 g.m. The intake temperature in this case was 104° F. (40° C.). When the intake was heated to 176° F. (80° C.) the carbon deposit with gasolines of 3, 18 and 35 m.g. of gum/100 c.c. was the same for all three fuels. At intermediate temperatures, proportional amounts of deposit were recovered. This phenomenon is probably caused by the fact that with a heated intake the gum deposits in the intake passage; carbon therefore forms from lubricating oil alone, as it does with a gum-free motor fuel. With no heating, all the gum passes into the combustion chamber and contributes to the carbon deposit.

2. Lubricating Oil

It is obvious that the bulk of the coke deposits in engine combustion chambers is to be attributed to the lubricating oil and to the solid matter drawn in with the intake air. Under conditions in which dust is eliminated, and all experimental conditions adjusted to constancy, it becomes possible to study the influence of the nature and properties of the lubricating oil on the deposit. Such conditions are obviously very difficult of attainment. Even when this is done, the complexity of composition of lubricating oils is such that definite conclusions are not easily reached.

Engine Conditions Which Produce Coke

During the running of an engine, the oil in service is exposed to three sets of different conditions. In the crankcase, the oil is heated to an average maximum of 200° F. (about 90° C.), is violently agitated and thrown as a fine mist into the vapor space above it, and is exposed to a small supply of air renewed rather slowly by the action of the crankcase ventilator and air breather. This condition is prolonged and the oil gets much of this sort of treatment. There is a certain amount of blanketing of the oil by vapors of heavy hydrocarbon diluents originating from the fuel, which are present in the oil and which vaporize to some extent from every oil surface. On the cylinder walls and underside of the piston, a thin film of the oil is exposed in the absence of air to a temperature averaging, say, 300 to 350° F. (150-175° C.) and rising to a maximum of about 450 to 500° F. (230-260° C.). This exposure is short, since the film is either pushed up or washed down. Some part of the oil in the film is exposed to this condition very many times. In the combustion chamber, oil is pushed up to flow over the piston surface or is sprayed into the gas space and on to the head surfaces. The droplets caught in the gas space by the flame are presumably completely burned, or at least carried out with the exhaust. The oil on the surfaces is exposed to a periodic broiling by a flame in an atmosphere containing gasoline vapor enough to take up all the oxygen present. Much of the oil on these surfaces is likely to be either distilled or coked—perhaps both to some extent. If the oil supply to the combustion chamber is large, some may return to the crankcase, but with normal oil supply this will be a very small amount.

Causes of Trouble

It will be seen that the crankcase condition is one of low temperature, rather slow, long-continued oxidation with a very insufficient supply of oxygen. The cylinder wall conditions are of those low temperature coking distillation. If supply is deficient, some of the oil in the ring grooves may not be washed out and might, depending on its history, cause trouble. In the combustion chamber there is a high temperature coking distillation, with little or no chance of oxidation. The mechanism by which deposits form under each of these conditions is therefore different. In the crankcase insoluble sludge may accumulate as a result of slow oxidation, precipitating in oil passages and on screens with serious consequences. This trouble is quite unusual with well refined oils. Some cases seem to have occurred in the early days of crankcase ventilators when too much air was drawn over the oil, but crankcase sludge is often an emulsion with cooling water leaking through from a defective engine block, stabilized by the iron rust which the water carries. Emulsions with condensed water from the exhaust gas are more frequent but usually less troublesome. On the cylinder walls, in the ring grooves, and under the piston, deposits can be formed if there is in the oil material unstable enough to decompose to solid residues at the relatively low temperatures prevailing. This trouble again is unusual for the ordinary case, but is more frequent for airplane engines and test engines cooled with ethylene glycol, etc., and running at jacket temperatures above 300° F. (150° C.). In the combustion chamber carbon deposits are universal in occurrence and trouble is frequent. It does not seem likely that in this case anything is involved except an outright thermal decomposition of the oil and the compounds contained in it. The film of

*Paper, World Petroleum Congress, London, England.

Object to Suggested Basis of Gasoline Price in Wyoming and Montana

By ANDREW M. ROWLEY

WASHINGTON, D. C., Nov. 18.—Gasoline consumers in Wyoming and Montana would be penalized from 3 to 4½ cents a gallon, because of state lines, if the minimum price schedule announced by Harold L. Ickes, oil administrator, is made effective, according to Governors L. M. Miller of Wyoming and F. H. Cooney of Montana who were granted a special hearing on the price schedule in the office of Nathan R. Margold, solicitor of the Interior Department and chairman of the Petroleum Administrative Board here last Thursday.

The price schedule as announced provides that in region No. 5 which includes Wyoming and Montana, "the minimum tank car delivered prices of refined petroleum products shall be Group 3 prices plus freight or Los Angeles or Portland prices plus freight, whichever is lower: provided however, refineries so located in said states as to enjoy lower transportation rates to points in said states may reduce such minimum delivered prices for gasoline in an amount not exceeding 1¼ cents per gallon in as much as a considerable percentage of refined products manufactured in said states must be marketed at an adverse transportation differential."

Governor Miller contended that the State of Wyoming has crude oil production and refineries with a gasoline capacity far in excess of the consumer requirements of the State. Refineries are located at Casper, Parco and Greybull. He claimed the addition of freight rates from Tulsa to the minimum price of 6½ cents a gallon was unfair to consumers of Wyoming in as much as more gasoline was manufactured in the State than was consumed there and freight rates from these refineries to other points in the State were far less than the freight rate from the base point Tulsa.

Governor Miller desires that the minimum price schedule provide for a basic price for the refineries in Wyoming. When asked by E. B. Swanson, member of the Petroleum Administrative Board, what he thought of the price of 6½ cents a gallon for gasoline and $1.11 for crude oil, Governor Miller said he felt these prices were fair and equitable and that these prices, he felt should apply in Wyoming as well as in the Mid-Continent. Governor Miller stated if a price of 6½ cents a gallon is fair for refiners in the Mid-Continent or Group 3 that price should be fair for refiners in Wyoming. He felt that would be a fair price to establish as a minimum at Casper, Wyo.

Governor Cooney stated Montana uses 75,000,000 gallons of gasoline a year and manufactures about half that quantity. He agreed with what Governor Miller had said and stated citizens of Montana were willing to pay the base price of 6½ cents a gallon plus freight from points in Wyoming but that they did not think it fair to pay this minimum price plus freight rates from Tulsa when practically all of the gasoline they used came from Wyoming. Governor Cooney was emphatic in declaring he did not believe jobbers had a right to make 4 cents a gallon on sales, that amount, he said, being entirely too high.

Each governor mentioned that neighboring states, such as South Dakota and Nebraska enjoy lower freight rates from Tulsa, hence gasoline prices in these states are as much as 4 cents a gallon less than in Wyoming.

oil on the head surfaces and any oil spray in the gas space will be exposed to the high temperature of the flame and will volatilize to an extent determined by the boiling range at the pressure prevailing. The amount of deposit left by thermal decomposition will depend then upon the amount of nonvolatile material contained and upon its chemical composition. Any asphaltenes and resins present will contribute directly to the coke deposit; this has been amply confirmed by the careful work of Garner[4]. But, in addition, the high boiling hydrocarbon constituents of the oil will themselves leave carbon. This is contrary to the ideas of Chernojookov[5], who has contended that paraffins and naphthenes do not form coke. That this is erroneous is clear from the experimental work of Bahlke, Barnard, Eisinger and Fitzsimmons[6], who recovered large coke deposits from engines lubricated with refined white oil and white petrolatum wax. It is evident that high boiling hydrocarbons on the engine surfaces, heated to decomposition temperature, will crack with the formation of coke, and this is almost certainly what happens in the combustion chamber.

Summarizing, we have the possibilities of slow oxidation in the crankcase to resins and asphaltenes, of low temperature coking of these compounds in the piston ring grooves, and the fair certainty of rapid cracking of both asphaltenes and resins (any originally in the oil as well as those which may have been produced in the crankcase) and high boiling oil on the surfaces of the combustion chamber.

Laboratory Tests for Coking Tendency

In choosing laboratory tests for the prediction of the coke-forming tendency of a new oil, we therefore have the choice of:

Oxidation tests to show the rate of formation of asphaltenes and resins.

Coking tests to show the amount of coke formed by rapid cracking.

Volatility tests to show the amount of (crackable) nonvolatile residue.

Oxidation Tests.—Oxidation tests have been devised among others, by Waters[7] and by Sligh[8], and have been related to coke-forming tendency, as indicated by laboratory examination, by Garner[9] Actual correlation with deposits formed in engines under controlled conditions seems to be lacking. Unpublished work by L. R. Adkins[10] indicated that an oil readily oxidized in the Sligh test usually gave a small carbon deposit, and that, conversely, an oil resistant to oxidation by the Sligh test was likely to give a heavy deposit. This is hardly what would be expected in view of the fact that oxidation forms resins and asphaltenes, which readily produce coke. A more favorable though still unsatisfactory correlation is shown by Heron[11] in a study of the conduct of lubricating oils in engines cooled with ethylene glycol and operating at jacket temperatures above the boiling point of water. The carbon trouble under observation was the sticking of piston rings by the coking of oil in the ring grooves. The oxidation test applied was the passing of 0.5 cubic feet per hour of air through a 40 c.c. oil sample at a temperature of 390-400° F. (200° C.) for 7 and 17 hours respectively. Of a group of five oils, the one which gave the highest oxidation result also gave specifically bad results as to ring sticking, but no closer differentiation was possible. This result is in line with the idea that asphaltenes formed by oxidation in the crankcase coked at the cylinder wall temperature, thus sticking the rings. But it should be recalled that the jacket temperature was of the order of 350° F. (175° C.) and that the oil in the grooves was therefore much hotter than would occur in an ordinary water-cooled engine.

Coking Tests.—The relation of coking tests[12] to carbon deposits in test engines has been brought out by work in the author's laboratory[13]. By careful control of all conditions (speed, load, temperature of oil, air, water and engine, air-fuel ratio, spark timing, and oil consumption), it was found possible to reproduce coke deposits and to recognize fairly good straightline relationships for each of several classes of oils (classified by viscosity) between carbon residue value and carbon deposited—oil and ash-free—per volume of oil consumed; the higher the carbon residue test value, the more deposit. This relation has been in general confirmed by several other investigators[14], and has been denied by Bahlke, Barnard, Eisinger and Fitzsimmons[15]. The failure of these latter workers to find the agreement expected may perhaps be due to neglect to control closely the air-fuel ratio and the engine temperature, both of which are highly significant. In addition, it seems that comparison was made between oils of different classes, and that gross carbon deposits, wet with oil, were used in the attempted correlation, rather than the dry carbon weights used by the author.

Volatility Tests.—The author has in several papers, as early as 1926, expressed the idea that the volatility of an oil at the temperatures prevailing in the oil films in the combustion chamber (almost flame temperature) is very important in determining coke deposits, and that the carbon residue tests owe much of their value for prediction of deposits to the fact that they constitute rough measures of the volatility under coking conditions. Vacuum distillation tests at 10 m.m. and 2 m.m. pressure were used in evaluating some of the oils employed. The thorough testing of the significance of volatility, determined under precise conditions, for coking tendency was undertaken by Bahlke, Barnard, Eisinger and Fitzsimmons[16], and their work brought out a reasonably good correlation between the gross carbon deposit, as recovered from the engine, and the temperature at which 90 per cent of the lubricant had distilled over under 1 m.m. of mercury pressure. The higher this 90 per cent point, the more coke was deposited by the oil in question. The distillation tests involved boiling points as high as 900° F. (480° C.); and since no known lubricating oil can be heated to this temperature without extensive cracking, it would appear that false indications may be possible. For instance, an oil which cracks easily might give a low 90 per cent point, thus indicating a small coke deposit; but actually the cracking might leave an appreciable amount of carbon. In addition, an original content of resins would contribute to the deposit but would not be discovered by the distillation test. It is interesting to note that Barnard[17] has encountered cases in which certain oils gave deposits recognizably less in amount than predictable from the 90 per cent point. It should also be recalled that the difficulties involved in using a vacuum distillation at 1 m.m. pressure as a laboratory test are considerable.

Conclusions

The above brief survey of experimental results suggests that too much emphasis cannot be laid upon oxidation tests for predicting the amount of deposits likely to form in a normal engine. It is reasonable to suppose that oxidation to unstable, coke-forming asphaltenes and resins does occur, and does contribute to the carbon deposit. Under special conditions this phenomenon may be quite important.

The actual manner in which coke forms in the combustion chamber seems to be a sequence of distillation of constituents volatile at flame temperature from the hot surfaces, with the subsequent coking distillation of the nonvolatile residue to leave a deposit. It has been recognized that with some oils this deposit may be loose and with others it may be adherent; but so far this can be predicted only empirically. The indication, however, is that the very highest boiling, entirely nonvolatile oils form the more adherent types of deposit, while those containing considerable proportions of constituents which can be vaporized without appreciable decomposition form the softer cokes which are more readily eroded away. None of the available tests can be regarded as closely indicative.

The oxidation tests have not yet established any significance for ordinary service; the distillation tests do not take sufficient account of the fact that an oil showing low boiling point may leave a considerable amount of carbon because of a content of resins; and the coking tests may leave something to be desired in the case of drastically refined products of excessively high boiling point. They are, however, probably the most serviceable and informative at the present time.

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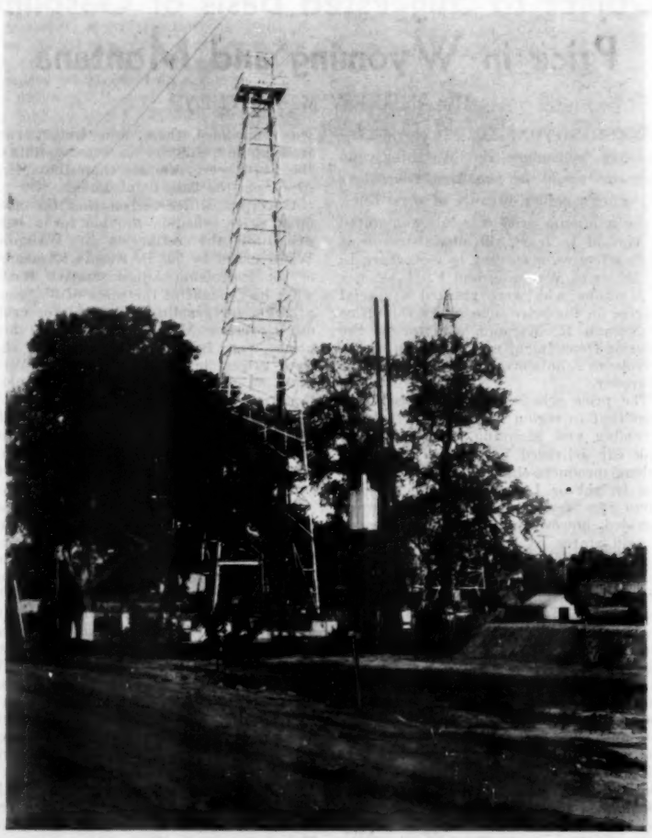
An Example of a Well Kept Lease in Oklahoma City Oil Field



Oliver Black lease, Continental Oil Company

Road Tests Prove Alcohol Is Inferior to Gasoline

That the alcohol-gasoline blend of motor fuel would be considerably less efficient than a regular gasoline, and that its universal, mandatory use would add hundreds of millions of dollars a year to the fuel bill of motorists, including farmers, who own one-fifth of the nation's motor vehicles, was shown by tests made by the Automobile Association.

The road and laboratory tests of the comparative efficiency of regular gasoline and a blended fuel containing 10 per cent alcohol were conducted jointly by the contest board of the A.A.A. and U. S. Bureau of Standards.

The findings were that in operation of the four conventional type automobiles in road test over the 10-mile course the alcohol blended fuel is on the average 4.94 per cent less efficient than regular gasoline.

Road tests with the fifth automobile over a measured mile showed a decrease in miles an hour, miles a gallon of gasoline and an increase in fuel consumed when the alcohol blended fuel was used.

Observations in the laboratory tests disclosed fuel consumption with the blend to be 4.5 per cent greater than with regular fuel.

Acceleration tests revealed that with a fuel containing 10 per cent alcohol a carburetor setting giving about 3 per cent greater fuel flow (richer mixture) was required to secure acceleration equal to that given by regular gasoline.

The 10 per cent alcohol blend improved the antiknock quality of the fuel, but only to the extent of one-fourth to one-third of that secured from the high test premium fuels on the market.

The alcohol in the blended fuel absorbed moisture from the atmosphere and the mixture of alcohol and water separated from the gasoline.

OIL MEN HEAR NEWSPAPERMAN

"The petroleum company has made up in speed what it lacked in age," said Louis Wiley, business manager of the New York Times, in a talk before executives of the Texas Co. in New York on November 15. "We are going forward," said Mr. Wiley, "to a better time for oil companies and newspapers and for all people who buy gasoline and read newspapers."

Pennsylvania Refiners Discuss the Effect of All Types Contamination in Used Motor Oils

By R. C. CONINE

BUTLER, Pa., Nov. 18.—Changes in characterstics of lubricating oils in the crankcase due to volatilization, polymerization, and contamination in use, were discussed and the significance of these changes weighed at the monthly meeting of the Pittsburgh group of the National Petroleum Association, held in Butler this week. The discussion was led by Louis A. Calkins, of the Valvoline Oil Co., of Butler. P. M. Robinson, research and development engineer, of Pennzoil Co., Rouseville, was called upon to outline phases of this investigation perfected by the Pennzoil laboratories.

The purpose of the tests on used motor oils, Mr. Robinson pointed out, is to determine the nature of the contamination from outside sources and the extent of deterioration of the oil. Obviously, he said, contamination by dirt, abrasive material, water, and dilution by unburned fuel resulting from choking, is not a function of the oil. Carbon in crankcase oils and blowby dilution are functions of the oil only to the extent that viscosity affects sealing of the piston. Dirt and abrasive materials come into crankcase oils with the air drawn through carburetors and crankcase vents. Dilution is a function of the design and mechanical condition of the car, the condition of operation and the fuel used. Water is a function of the design of the car and the condition of operation. Crankcase vents have been responsible in eliminating water troubles to a certain extent. Free carbon in crankcase oils is a function of the amount of blowby which drives carbon from the combustion chamber past the rings. Some carbon is probably formed when hot blowby passes over the coating of oil on cylinder walls.

None of these contaminations is due to the oil. Therefore, Mr. Robinson said, before any conclusions may be drawn of the relative merits of crankcase oils, contamination must be determined and allowance made for differences.

Deterioration is a function of the oil used. Oxidation of unsaturates to form compounds insoluble in the oil, which settle out in the crankcase, in oil lines, in bearing feed holes, in pump screens and in oil ring slots and polymerization to form high viscosity compounds, are the two principal oil deterioration factors. Cracking, no doubt, may be responsible for unsaturates if they are not included in the original oil. An emulsion of free carbon, dirt, water and metal, bound together by oxidized material, is the most dangerous condition met in motor operation and is what is commonly known as sludge.

Influence of Dilution

Determination of deviation of the oil in service from the original specifications usually shows the following: There is a small decrease in viscosity, a large decrease in flashpoint, a decrease in pourpoint, a small increase in A.P.I. gravity, and a small increase in viscosity index, all caused by 3 to 5 per cent dilution. However, in extreme cases, dilution may range from zero to 25 per cent. Oils need to be viscous at the circulated temperature to prevent wear of piston rings and cylinders, and oils should be thin enough to prevent internal friction of the oil.

Effect of Water in Crankcase

Water in the crankcase in any amount is bad, and its presence is common to winter operation. As much as a quart of so-called sludge has been removed from a crankcase and upon examination has been found to contain 60 to 70 per cent water. This sludge is a gelatinous mass of dirt, free carbon, metal, oxidized oil and water. Water not only emulsifies the other products of contamination but also catalyzes oxidation of the oil. Water, also, will rust highly polished parts. Corrosion resulting from presence of sulphur or improperly neutralized acid treated motor oils in contact with moisture is well known. Water in the crankcase is caused partly by blowby of water of combustion and partly by condensation of moisture in air drawn in through the vent while the automobile is idling at low temperatures. Water leaking from the jacket has caused considerable trouble for which the oil has been blamed.

Too much, Mr. Robinson said, has been claimed in connection with the harmful effects of dilution, except where it is present in an unusually large degree. Dilution often counteracts the inclination of motorists to use too viscous oils and is beneficial to some extent. It is known that dilution will come to an equilibrium with operating conditions and manufacturers of motor oils must recognize the fact and make the proper allowances.

Physical tests are run on the used motor oil after it is brought to the original flashpoint as an indication of freedom from dilution. If the viscosity of the oil has not increased, it is assumed that no volatilization or polymerization has taken place. There is a possibility, of course, that polymerization of heavy ends of the fuel, or mild cracking of the oil itself might fill in the range after volatilization has taken place, but it is hardly likely that such changes can escape detection. Therefore, it seems, that if the oil is returned to its original flashpoint and viscosity by removal of the diluent, any consumption of the oil which may be determined has been caused by leakage into combustion chamber. An increase in viscosity may be caused by three things, volatilization of light ends, polymerization, or oxidation. If the polymerization is of unsaturates formed by cracking, a decrease in viscosity index may be expected. Tests have also indicated that if soluble oxidized compounds are formed an increase in viscosity index may be expected. A neutralization number will perhaps, Mr. Robinson said, give some indication if oxidation is responsible for increase in viscosity. However, as there is no definite proof that soluble oxidized compounds debase an oil, increase in viscosity is generally attributed to volatilization. None of the tests on used Pennsylvania grade oils has shown an increase in viscosity sufficient to cause any alarm, he said.

Foreign Matter Tolerance

A precipitation number is run on the sample as it is taken from the crankcase to obtain the volume per cent of foreign material in the oil. Experience has shown that when this volume exceeds about 3 per cent trouble may occur. The precipitated material is transferred to a crucible, washed, dried free of water (which is determined by volume in a separate test), and weighed. The precipitate is then extracted with chloroform which removes any products that have resulted from deterioration of the oil itself. The difference in weight of the crucible before and after extracting may be used in calculating per cent by weight. If this per cent runs more than 0.5 per cent, the oil has been subjected to extremely hard service and has oxidized more than is normal for a Pennsylvania grade oil.

Abrasives in Oil

The additional test of washing the precipitate is merely to determine the condition of the abrasive materials present. Free carbon, dirt and metal contribute considerably to wear.

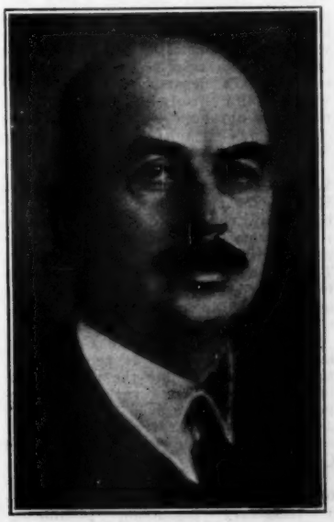
Testing procedure is outlined as follows: On receipt of the used motor oil sample the usual tests of gravity, flash, fire, viscosity at 100° F. and 210° F., pour, are run by Standard A.S.T.M. methods. The next step is an analysis for water or moisture according to A.S.T.M. After this the extent of dilution determination and reduction of the sample for further tests follow. The Standard A.S.T.M. procedure is not used in this test. To a gallon flask is charged 500 cc.'s of oil which is then heated to 320° F. Superheated steam is admitted to the flask to hasten distillation in a quantity sufficient to hold the temperature of the oil in the flask to 320° F. Direct heating is discontinued except to dry out drops of condensed moisture in the neck of the flask. Vapor temperatures are disregarded. This test is based on a large number of experiments with prediluted samples and it has been found that the oil is thus brought to its original flash and fire specifications. After all dilution has been removed, the percentage of dilution is recorded, the sample cooled and strained through a linen mat of a Buchner funnel to remove all solid matter and physical tests are then obtained on this sample. These tests are to determine the viscosity increase through volatilization and polymerization.

Next, 10 grams of the oil are carefully weighed in a 50 cc. centrifuge tube and diluted to 50 cc.'s with A.S.T.M. precipitation naphtha (Skellysolve) and centrifuged at 1,500 r.p.m. for 15 minutes. The precipitate is then transferred to a weighed Gooch crucible, washed, dried, and weighed. A check on the total foreign matter and oxidized and polymerized oil is made by running a Conradson carbon residue on the sample as it is taken from the crankcase.

The following refinery engineers and technologists took part in the discussions: George M. Kirkwood, Pennsylvania Refining Co., Butler; Joseph E. Moorhead, Pennsylvania Grade Crude Oil Association, Oil City; P. A. Walsh, Valvoline Oil Co., Butler; S. A. Hartwell, Jr., Pennsylvania Grade Crude Oil Association, Oil City; W. L. Peters, Jr., feed water treating engineer, Pelham, N. Y.; Charles C. Janett, Freedom Oil Works Co., Rochester; C. A. Wardner, W. H. Daugherty & Son Refining Co., Petrolia; A. M. Crittenden, Freedom Oil Works Co., Freedom; R. L. Leroux, Valvoline Oil Co., Butler; G. O. Ebrey, The Pennzoil Co., Oil City; Rex W. Woods, Pennsylvania State College, State College; Louis A. Calkins, Valvoline Oil Co., Butler; P. M. Robinson, The Pennzoil Co., Oil City; Ryan Storey, Ultra-Penn Refining Co., Bruin; Leslie C. Barett, W. H. Daugherty & Son Refining Co., Petrolia, and Charles M. Noyes, Valvoline Oil Co., Butler.

C. O. Stillman, Former President of the Imperial Oil, Ltd., Dies in Toronto

TORONTO, Ontario, Nov. 21.—C. O. Stillman, former president of Imperial Oil, Ltd., died in Toronto on November 18 after a brief illness. When he retired in June last from the presidency of Imperial Oil, which office he had held for 14 years, Mr. Stillman had completed more than 52 years in the oil industry.



C. O. STILLMAN

He was born in Cleveland, Ohio, in 1864 and at the age of 16 went to work under his father at the Standard Oil plant at Bayonne, N. J. He served for two years in the plant and for the next eight years was occupied in various departments. In 1890 he was appointed superintendent of the Atlas plant at Buffalo, N. Y., and in 1896 was sent to Petrolia, Canada, to manage the Bushnell company which had been acquired by the Standard interests. In 1897 he began at Sarnia, Ontario, the construction of Imperial's first refinery. He was appointed a director and superintendent of Imperial Oil in 1899 and general superintendent in 1901. He became assistant general manager in 1910 and vice president the following year. In April, 1919, he succeeded the late W. J. Hanna as president. Until last June he was a director of International Petroleum Co., Ltd., and at the time of his death was a director of the Dominion Bank and of Canadian General Securities.

He is survived by his widow. The funeral took place from his late home in Toronto on November 20 and interment was at the Moravian Cemetery at New Dorp, Staten Island, New York.

PURE OIL TO BUILD STATIONS

AUGUSTA, Ga., Nov. 18.—The Pure Oil Co.'s subsidiary, the Wofford Oil Co., which is now operating barges on the Savannah River between Savannah and Augusta, has been authorized to spend $50,000 in August and environs erecting new filling stations to retail Pure Oil products.

Study of Overhanging Salt on Various Domes of Texas and Louisiana Areas: Part Four

By SIDNEY A. JUDSON[1] and R. A. STAMEY[2]
Houston, Tex.

General Description. — Allen Dome in Brazoria County, Texas, is located 60 miles southwest of Houston and approximately 8 miles inland from the Gulf of Mexico.

The presence of this dome was indicated by a torsion balance survey by the Shell Petroleum Corp in 1925 and was confirmed when the same company in its initial test, No. 1 Allen, on the east flank, encountered cap rock at 822 feet. This company in May, 1927, completed No. 1 Bernard River as the first producer for 700 bbls. of 31 gravity oil

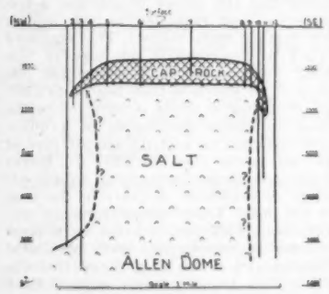


FIGURE 11

(1) Shell Pet. Corp., No. 3 J. T. Reese; (2) Freeport Sulphur, No. 2 J. T. Reese; (3) Mills Bennett Prod. Co., No. 2 J. T. Reese; (4) Freeport Sulphur, No. 8 J. T. Reese; (5) Freeport Sulphur, No. 6 Poole; (6) Freeport Sulphur, No. 4 Poole; (7) Freeport Sulphur No. 15 Poole; (8) Freeport Sulphur, No. 12 Poole; (9) Freeport Sulphur, No. 7 Poole; (10) Mills Bennett Prod. Co., No. 2 Randon et al; (11) Mills Bennett Prod. Co., No. 1 Poole; (12) Mills Bennett Prod. Co., No. 12 Randon et al

from a depth of 5,141 feet. Exploration for oil up to the present time has been mainly confined to flank drilling. Thirty-nine wells have been drilled on the various flanks. Of these, nine wells were producers. The total oil recovered to date has been 69,000 bbls. Additional drilling is necessary to determine whether or not the flank sands will provide attractive production.

The shape of this dome as indicated by drilling is circular, with a diameter of less than 1 mile.

Overhang. — No. 2 Randon, on the southeast flank drilled by Mills Bennett Production Co. in 1931 is recorded as having drilled through alternating ledges of cap rock and salt as follows:

Feet		—Feet—	
432	Cap rock	1,199-	1,631
161	Salt	1,631-	1,792
7	Cap rock	1,792-	1,799
15	Salt	1,799-	1,814
8	Cap rock	1,814-	1,822

Sedimentary beds were found from 1,822-5,308 feet. Sands carrying oil shows were found at 2,700 feet and 4,493 feet. The hole was abandoned at 5,308 feet because of a fishing job.

A northwest-southeast cross section of this dome is illustrated in Figure 11. Because of meager drilling data the width and extent of the salt overhang cannot be reliably estimated.

Orchard

General Description. — Orchard Dome in Fort Bend County, Texas, is located 40 miles west and slightly south of Houston. This dome was located in 1924 by a seismic survey for the Gulf Production Co. Presence of this dome was proved in the same year when the Gulf Production Co.'s No. 1 J. M. Moore encountered cap rock at 375 feet. In January, 1926, the Gulf Production Co. completed its No. 5 John M. Moore on the east flank for 2,000 bbls. of oil at a depth of 3,759 feet. Development of this dome is under control of one company, and the field has had an orderly drilling program. Over 1,800,000 bbls. have been produced from 20 wells. Production so far developed has been located on the south and the northeast flanks of the dome.

Overhang. — Gulf Production Co.'s No. 34 Moore, located on the southeast flank, was drilled through 76 feet of salt from 3,077-3,153 feet and then was continued in sedimentary strata to a depth of 4,389 feet where it was abandoned after testing three sands below the salt, all of which produced either sulphur water or salt water. This well had a very thin cap rock above the salt and is the only well on this dome recorded as having passed through salt overhang. The lack of exploration of the overhang by further drilling leaves its extent a matter of conjecture.

SALT DOMES IN EAST TEXAS SYNCLINE

Bethel

General Description.—Bethel Dome is in the extreme northwestern part of Anderson County, Texas, 14 miles northwest of the Keechi Dome. It was located by a seismic survey and salt was found in the year 1928 at a depth of 1,600 feet beneath 110 feet of anhydrite. The development has been limited to a total of four exploratory wells, none of which were producers.

Overhang.—The Pure Oil Co.'s No. 2 Willie Bruce was drilled through 72 feet of salt from 3,448-3,520 feet overlain by 92 feet of cap rock. Sedimentary formations were found beneath the salt, and at 4,007 feet the hole was in beds of the Taylor formation. The well was abandoned at 4,306 feet in shale. This is the only well on this dome where a ledge of salt has been found.

The extent of this salt ledge or overhang cannot be estimated from the small amount of exploration.

Keechi

General Description.—Keechi salt dome in Anderson County, Texas, is located 6 miles northwest of Palestine. This dome has been described in detail by Powers[3]. He states that this dome did not produce a conspicuous topographic feature. The first exploration for oil at Keechi was in 1916 and 1917 when the Producers Oil Co. (now the Texas Co.) drilled five dry holes. Since that time a few additional tests have been drilled principally by the Navarro Oil Co. although oil in commercial quantities was not discovered. This is a very shallow dome, 16 to 200 feet of cap rock is recorded in wells on the northwest flank. Its diameter is about 1½ miles at the 3,000-foot level, and appears to increase rapidly with depth.

Overhang.—One well was recorded by Powers[3] as having been drilled through a salt ledge. This was the Producers Oil Co.'s No. 1 which was drilled through 660 feet of salt from 2,162-2,822 feet. Sands with heavy oil are recorded from 2,822-99 feet, and sandy shale from 2,899-3,091 feet. Salt was encountered again from 3,091-3,170 feet where the well was abandoned. A cross section from northwest to southeast across this

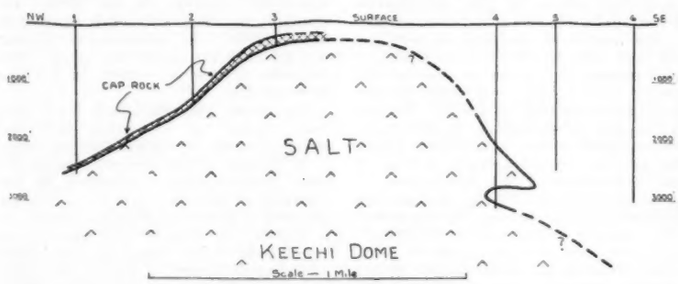


FIGURE 12

(1) Navarro Oil Co.'s Greenwood No. 4; (2) Navarro Oil Co.'s Greenwood No. 3; (3) Navarro Oil Co.'s Greenwood No. 2; (4) Producers Oil Co.'s Barrett & Greenwood No. 1; (5) Producers Oil Co.'s Barrett & Greenwood No. 3; (6) Producers Oil Co.'s Barrett & Greenwood No. 5

dome shown by Figure 12 after an illustration by Powers as modified by later drilling indicates the shape of the salt mass and the salt ledge. This single instance of finding a short section of sedimentary beds beneath salt does not justify a conclusion that an extensive overhang exists here.

Acknowledgments

Much of the information used in the present paper was beyond the direct personal observation of the writers, both on account of the period of time involved and the large number of domes studied. Therefore, much data has been used from many papers by Gulf Coast writers. Operators have freely extended the use of their records and many geologists have supplied essential information and suggestions. John Larke, of the Texas Gulf Producing Co., has collaborated in the collection, preparation and study of this information and has made the drawings of the figures used.

Part 1 of this article was published in The Oil and Gas Journal October 12. Part 2, October 19. Part 3, November 9.

Presented at Houston meeting of American Association of Petroleum Geologists.

Complete paper will be published in the December A.A.P.G. Bulletin.

[1]Chief geologist, Texas Gulf Producing Co.

[2]Geologist, Texas Gulf Producing Co.

[3]Sidney Powers, "Interior Salt Domes of Texas," Bull. Amer. Assoc. Petrol. Geol., Vol. 10, No. 1, January, 1926, pp. 35-45, and "Geology of Salt Dome Oil Fields," symposium published by A.A.P.G., 1926, pp. 243-53.

Texas Railroad Commission Is Cited on Order Restraining Back Allowable

AUSTIN Tex., Nov. 20.—All members of the Railroad Commission, Assistant Attorney General Maurice Cheek and oil officials of the commission were cited in San Antonio to appear to show cause why they should not be held in contempt of court in a case in which the attorney general's department announced it was standing firmly on the ground of numerous appellate court decisions. The citation was to appear at San Antonio November 28.

Citation was by District Judge W. W. McCrory, on application of former Highway Commissioner Joe Burkett, based on Burkett's complaint the Railroad Commission had ignored a temporary order issued by Judge McCrory. The order restrained the commission from interfering with Burkett's making up back allowable production as receiver of a well in Rusk County.

Members of the Railroad Commission said, while the case was pending, that they would not violate the terms of an injunction, but that invariably the appellate courts have held that only orders issued by a Travis County district court were binding upon the Railroad Commission.

The commission, through Assistant Attorney General Cheek had obtained here a temporary injunction prohibiting Burkett from violating state proration rules and from running the back allowable.

The commission had not interfered with his producing the back allowable oil, Commissioner Thompson said, but would refuse to sign the tender to permit the oils being shipped or marketed.

Along with Chairman Lon A. Smith, Commissioner C. V. Terrell, Commissioner Ernest O. Thompson and Assistant Attorney General Cheek, Judge McCrory cited R. D. Parker, chief oil and gas supervisor, Travis Golay, agent of the commission, and Capt. E. N. Stanley, special Texas ranger, and chief of the East Texas oil administration staff.

Attorney general department officials declared themselves unworried. They said the law specifically gives Travis County district courts exclusive jurisdiction in such proceedings in which the state officials are a party, and that this question has been adjudicated on appeal in numbers of cases.

Their response to the San Antonio citation was indicated to be the legal submission that the original order by Judge McCrory was void, and thus the commission could not have been in contempt in connection with it. If this is overruled, they will have priority over all other cases in getting the question decided by appellate courts. Should Judge McCrory attempt to issue commitment orders against any of the state officials, habeas corpus proceedings would put the matter in the appellate court quickly.

TABLE 1—TABULATION OF WELLS THAT HAVE BEEN DRILLED THROUGH OVERHANGING SALT

	Salt top	Overhang base	Total salt	Total depth	Completed	Initial prod.	Flank	Remarks—
Bell Isle, Louisiana—								
Gulf Refining Co.'s No. 5 or 15 (?)	600	630	30					
	780	810	30	1,500				
	1,080	1,100	20	....	Appr. 1898	0	NW	
Anse La Butte, Louisiana—								
Heywood's No. 1 Martin	268	540	272	1,550	1902	40	NE	Producing from 1,100 ft.
Anse La Butte's No. 2 Begnaud	283	383	100	1,784	(?)	0	N	
Martin-Simpson, Begnaud (?)	390	570	180	790	(?)	0	N	
Vinton Dome, Louisiana—								
Gulf Refining Co.'s No. 1 Wilson	1,106	1,413	307	2,100	1911	40	NE	Gypsum, 1,140-1,170 ft.
Marrs McLean's No. 1 F. H. Gray	1,282	1,545	263	2,200	1922	Prod.	N	Oil formations to 2,000 ft.; salt, 2,000-2,200.
Marrs McLean's No. 3 F. H. Gray	1,240	1,780	540	1,925	....	Prod.	N	
Gulf Refining Co.'s No. 1-A F. H. Gray	1,415	(?)	....	1,848	....	Prod.	N	
Prod.-Hooks' No. 1 J. G. Gray	970	989	19	1,620	....	0	E	
Marrs McLean's No. 10 F. H. Gray	1,295	1,430	235	1,765	....	Prod.	N	
Marrs McLean's No. 12 F. H. Gray	1,300	1,553	253	2,700	....	Prod.	N	Oil horizon, 1,700-2,000 ft.; salt, 2,000-2,700.
Lake Barre Dome, Louisiana—								
The Texas Co.'s No. 1 State Lake Barre	3,036	3,048	12	3,815	1931	2,100	NE	
The Texas Co.'s No. 12 State Lake Barre	2,522	2,808	286	3,809	1932	700	N	
The Texas Co.'s No. 14 State Lake Barre	1,578	1,612	34					
	2,370	2,424	54	3,802	1932	1,872	N	
The Texas Co.'s No. 16 State Lake Barre	2,412	2,680	268					
	2,725	2,788	63					
	2,970	3,094	124	3,792	1932	1,735	NE	
Hull Dome, Texas—								
Republic Production Co.'s No. 55 fee, Dolbear	1,190	1,454	264	1,955	1922	2,000	NE	
Republic Production Co.'s No. 55-A fee, Dolbear	1,263	1,665	402	2,262	1932	0	NE	
High Island Dome, Texas—								
Gulf Production Co.'s No. 8 G. E. Smith	3,282	3,327	45	3,454	1929	0	S	
Yount Lee Oil Co.'s No. 21 Cade	1,777	4,821	44	5,077	1931	700	NW	
Yount Lee Oil Co.'s No. 23 Cade	4,631	4,741	110	4,752	1931	0	NW	
Yount Lee Oil Co.'s No. 2 fee (B&O)	4,618	4,935	317	6,022	1932	65	NW	
Yount Lee Oil Co.'s No. 32 Cade	4,691	4,738	47	5,255	1932	702	NW	
Yount Lee Oil Co.'s No. 13 George E. Smith	3,571	3,761	190	4,620	1932	0	SW	Salt, 3,834-4,620 ft.
Yount Lee Oil Co.'s No. 1 fee (H. Mathis)	3,110	3,135	25					
	3,165	3,216	51					
	3,236	4,507	1,271	4,608	1933	0	S	
Yount Lee Oil Co.'s No. 33 Cade	4,783	4,903	120	5,615	1933	1,035	NW	
Barbers Hill Dome, Texas—								
Humphreys Corp.'s No. 2 Ilfrey	1,531	2,409	878	5,087	2-26-30	1,062	E	
Humphreys Corp.'s No. 1 McLean	2,066	2,293	227	5,360	3-22-30	1,150	E	Drilled to 6,078 ft. Plugged back to 5,360 ft.
Humphreys Corp.'s No. 1 Morgan	2,346	2,542	196	6,404	6-26-30	319	NE	Later deepened to 6,469 ft. and abandoned.
Humphreys Corp.'s No. 2-C Kirby	2,196	2,245	49	5,224	6-29-30	20	E	Small pumper.
Mills Bennett Production Co.'s No 2 Gulf-Fisher	2,177	2,433	256	4,710	7-12-30	1,852	S	Later deepened and completed at 5,242 ft.
Sun Oil Co.'s No. 6 Chambers	2,223	2,573	359	4,124	8-22-30	1,000	S	Later deepened and completed at 4,622 ft.
Sun Oil Co.'s No. 9 fee, Wilburn	2,091	2,101	10	5,167	9-19-30	126	SE	
Mills Bennett Production Co.'s No. 3 E. W. Barber	1,557	3,198	1,641	5,147	10- 1-30	1,450	N	
Humphreys Corp.'s No. 1 T. S. Fitzgerald	2,115	2,664	549	5,367	10-19-30	1,500	NE	
Yount Lee Oil Co.'s No. 16 Chambers	2,338	2,486	148	4,733	11-23-30	1,320	S	Later deepened and completed at 5,293 ft.
Humphreys Corp.'s No. 8-B Kirby	1,631	2,551	920	5,295	11-29-30	1,920	E	
Humphreys Corp.'s No. 6-A Barber	3,581	4,360	779	5,485	12-16-30	962	NW	
Sun Oil Co.'s No. 12 fee, Wilburn	2,045	2,325	280	5,127	12-18-30	580	SE	
Humphreys Corp.'s No. 1-B E. W. Barber	2,085	2,721	636	6,793	12-26-30	0	NE	Stuck drill pipe; abandoned.
Sun Oil Co.'s No. 7 Chambers	1,836	3,092	1,256	4,583	1-10-31	2,013	S	
Mills Bennett Production Co.'s No. 3 Gulf-Fisher	1,467	2,792	1,325	4,437	1-22-31	1,336	S	Deepened to 5,056 ft.; flowing.
Yount Lee Oil Co.'s No. 17 Chambers	1,453	3,341	1,888	5,054	2- 9-31	180	S	
Humphreys Corp.'s No. 10-A Kirby	3,120	3,346	226	6,955	2-20-31	0	NW	Tested S.W. at 6,378 ft.; abandoned, 6,955 ft.
Humphreys Corp.'s No. 1 L. E. Fitzgerald	1,424	3,842	1,821	5,379			NE	Top second salt, 4,928 ft.; T.D., 5,379 ft.; salt, S.T. 1,700 ft.
	1,424	2,963	1,539	5,199	3-16-31	1,977		
Yount Lee Oil Co.'s No. 18 Chambers	1,758	3,383	1,625	4,465	3-24-31	690	S	
Mills Bennett Production Co.'s No. 1-B E. W. Barber	1,415	3,112	1,697	5,320	3-25-31	225	N	
Sun Oil Co.'s No. 8 Chambers	1,833	3,188	1,355	4,521	4- 6-31	1,100	S	
Humphreys Corp.'s No. 2-B Barber	1,389	3,239	1,850	5,079	4-11-31	1,852	NE	
Humphreys Corp.'s No. 2 J. F. Wilburn	1,715	2,007	292	5,234	4-24-31	1,115	SE	
Yount Lee Oil Co.'s No. 19 Chambers	1,870	....	3,821	5,691			S	5,691 ft. T.D. in salt; plugging back to 800 ft.; sidetracked.
	1,765	3,693	1,928	3,794	4-30-31	705		
Sun Oil Co.'s No. 14 fee, Wilburn	1,527	2,620	1,093	3,914	4-30-31	0	SE	Stuck drill pipe, abandoned.
Humphreys Corp.'s No. 1 Anna Davis	1,422	2,984	1,562	5,323	6- 6-31	1,901	NE	
Humphreys Corp.'s No. 2 T. S. Fitzgerald	1,403	2,940	1,337	5,259	6-23-31	1,650	NE	
Mills Bennett Production Co.'s No. 4 Gulf Fisher	1,521	2,903	1,382	3,044	6-27-31	1,728	S	
Humphreys Corp.'s No. 1 Fitzgerald-Meadows	1,397	3,361	1,964	4,232	7-29-31	1,570	NE	
The Texas Co.'s No. 6 J. F. Wilburn	1,595	2,368	773	4,509	8- 6-31	3,746	E	
Sun Oil Co.'s No. 1 Anna Higgins	2,170	2,234	64	5,341	9- 7-31	250	S	
Gulf Production Co.'s No. 5 J. F. Wilburn	1,674	2,387	713	4,494	10- 4-31	1,700	E	
McAlbert Oil Co.'s No. 4 J. F. Wilburn	1,490	2,420	930	4,475	10- 4-31	2,000	E	
Texas Gulf Producing Co.'s No. 1 Eberspacher	1,383	2,830	1,447	5,313	10-10-31	1,648	NE	
Sun Oil Co.'s No. 1 J. F. Wilburn	1,499	2,459	960	2,610	10-23-31	200	E	Flowing by heads.
Mills Bennett Production Co.'s No. 5 J. F. Wilburn	1,440	2,856	1,460	4,407	10-24-31	3,200	E	
Sun Oil Co.'s No. 2 O. K. Winfree	4,661	4,979	318	5,359	10-28-31	....	W	Later deepened and completed at 5,627 ft.
Texas Gulf Producing Co.'s No. 8-H Kirby	1,444	2,338	894	4,401	11- 3-31	1,908	E	
Sinclair Oil & Gas Co.'s No. 8 J. F. Wilburn	1,430	2,721	1,291	4,494	11- 7-31	1,400	E	
Texas Gulf Producing Co.'s No. 2 Tarbutton	1,417	2,634	1,217	3,506	11-15-31	712	E	Flowing by heads.
The Texas Co.'s No. 7 J. F. Wilburn	1,517	2,376	859	4,422	11-21-31	650	E	
Texas Gulf Producing Co.'s No. 3-B Barber	1,381	3,605	2,224	4,868	12- 1-31	1,494	NE	
The Texas Co.'s No. 2 fee, Lawrence	1,422	2,667	1,245	4,425	12- 2-31	90	E	Deepened to 5,313 ft. and abandoned.
Mills Bennett Production Co.'s No. 1 fee, Gulf	1,365	3,506	2,141	5,134	12-16-31	1,320	NE	
Gulf Production Co.'s No. 6 J. F. Wilburn	1,426	2,712	1,286	4,471	12-17-31	960	E	
Texas Gulf Producing Co.'s No. 1 Morgan-Fitzgerald	1,376	3,795	2,419	5,214	1- 3-32	2,189	NE	
Sun Oil Co.'s No. 12 J. F. Wilburn	1,496	2,518	1,022	4,472	1- 8-31	1,200	E	
Mills Bennett Production Co.'s No. 6 J. F. Wilburn	1,386	2,939	1,553	5,034	1-13-32	1,922	E	
Mills Bennett Production Co.'s No. 5 Gulf Fisher	1,480	3,043	1,563	4,407	1-18-32	2,100	S	
Texas Gulf Producing Co.'s No. 1 J. M. Fitzgerald	1,409	3,319	1,910	5,263	1-19-32	2,200	NE	
Sun Oil Co.'s No. 2 Annie Higgins	1,424	3,549	2,125	3,648	1-27-32	1,600	S	
Sinclair Oil & Gas Co.'s No. 11 J. F. Wilburn	1,423	2,753	1,321	4,447	2- 1-32	400	E	
Sinclair Oil & Gas Co.'s No. 10 J. F. Wilburn	1,437	2,730	1,293	4,849	2- 8-32	1,017	E	
Sinclair Oil & Gas Co.'s No. 9 J. F. Wilburn	1,462	2,500	1,038	4,881	2-15-32	812	E	
Texas Gulf Producing Co.'s No. 9-H Kirby	1,420	2,605	1,185	5,125	2-23-32	1,300	E	
The Texas Co.'s No. 8 J. F. Wilburn	1,430	2,522	1,092	4,407	3-17-32	100	E	
McAlbert Oil Co.'s No. 5 J. F. Wilburn	1,495	2,942	1,537	4,325	3-20-32	800	E	
Gulf Production Co.'s No. 7 J. F. Wilburn	1,380	2,860	1,480	4,364	3-24-32	500	E	
Bashara Oil Co.'s No. 2 Tarbutton	1,414	2,575	1,161	3,634	3-27-32	....	E	Small pumper.
Texas Gulf Producing Co.'s No. 1 M. O. Scott	1,377	3,471	2,094	4,174	4-19-32	1,368	NE	Original T.D. 5,629; plugging back.
Texas Gulf Producing Co.'s No. 9-B Kirby	1,374	4,171	2,797	4,245	4-27-32	852	NE	
Mills Bennett Production Co.'s No. 8 J. B. Means	1,435	2,551	1,116	4,445	5-10-32	2,500	E	
Gulf Production Co.'s No. 8 J. F. Wilburn	1,414	2,772	1,358	4,362	5-16-32	984	E	
Sinclair Oil Co.'s No. 12 J. F. Wilburn	1,386	2,693	1,307	4,312	5-27-32	1,500	E	
McAlbert Oil Co.'s No. 2-B Higgins	1,470	2,393	923	5,197	6- 2-32	359	SE	
Sun Oil Co.'s No. 14 J. F. Wilburn	1,462	2,629	1,167	4,385	6-17-32	1,300	E	
Texas Gulf Producing Co.'s No. 3 Ilfrey	1,410	2,558	1,148	4,460	6-17-32	2,300	E	
Texas Gulf Producing Co.'s No. 7-A A. E. Barber	2,920	5,733	2,813	5,830	6-17-32	161	NW	Pumping.
Texas Gulf Producing Co.'s No. 10-B Kirby	1,396	3,128	1,732	4,376	6-23-32	1,500	NE	
Mills Bennett Production Co.'s No. 4 J. B. Means	1,407	2,865	1,458	4,410	7-14-32	1,700	E	
Mills Bennett Production Co.'s No. 3 Kirby	1,395	2,875	1,480	4,409	7-31-32	2,059	E	
Texas Gulf Producing Co.'s No. 2 Cornelia Barber	1,420	2,630	1,210	4,309	8- 1-32	374	E	
Mills Bennett Production Co.'s No. 4-A E. W. Barber	1,424	3,320	1,896	5,143	8-21-32	400	N	
Texas Gulf Producing Co.'s No. 10-H Kirby	1,396	2,860	1,464	5,107	8-27-32	1,456	E	
Rio Bravo Oil Co.'s No. 3 A. M. Fisher	4,977	5,375	398	6,018	8-30-32	dry	W	Abandoned August 30, 1932.
Texas Gulf Producing Co.'s No. 11-H Kirby	1,388	3,101	1,713	4,210	9-11-32	1,248	E	
Mills Bennett Production Co.'s No. 4 Kirby	1,370	3,031	1,661	4,204	9-21-32	2,246	E	
Texas Gulf Producing Co.'s No. 4-C Kirby	1,385	3,278	1,893	3,975	9-25-32	1,815	E	
Sun Oil Co.'s No. 3 Higgins	1,466	2,437	971	3,018	9-28-32	300	SE	
Texas Gulf Producing Co.'s No. 3-C Kirby	1,384	3,095	1,711	5,224	9-30-32	608	E	
Texas Gulf Producing Co.'s No. 4 Ilfrey	1,382	3,077	1,695	4,034	11-29-32	1,211	E	
Texas Gulf Producing Co.'s No. 11-A Kirby	2,932	4,784	1,852	6,130	12-15-32	1,409	NW	
Texas Gulf Producing Co.'s No. 2 McLean	1,258	2,990	1,732	4,130	12-16-32	874	E	Original T.D., 5,315 ft.
Mills Bennett Production Co.'s No. 5 Means	1,383	3,605	2,222	4,585	12-16-32	dry gas	E	Later made 800 bbls. pipe line oil.
Texas Gulf Producing Co.'s No. 2 O. K. Winfree	3,971	4,821	850	6,284	12-17-32	dry	NW	Top second salt, 6,290 ft.; sidetr'k'd 2,810 ft.
Mills Bennett Production Co.'s No. 5 Kirby	1,373	3,168	1,795	4,033	1- 3-33	437	E	
Texas Gulf Producing Co.'s No. 3 Tarbutton	1,363	3,163	1,800	4,060	1- 8-33	1,169	E	Original T.D., 4,628 ft.
Sinclair-Prairie's No. 13 Wilburn	1,382	3,143	1,761	4,307	1-14-33	2,000	E	
McAlbert Oil Co.'s No. 6 Wilburn	1,400	3,221	1,821	4,328	1-23-33	1,250	E	
Texas Gulf Producing Co.'s No. 12-H Kirby	1,392	3,023	1,631	4,270	2-27-33	1,300	E	
Sun Oil Co.'s No. 15 Wilburn	1,432	2,612	1,180	4,520	3- 7-33	351	E	351 bbls. fluid in six hours; 15 per cent S.W.; pumping.
Allen Dome, Texas—								
Mills Bennett Production Co.'s No. 2 Randon	1,631	1,792	161					
	1,799	1,814	15	5,308	1931	0	SE	Junked; had oil shows in sands below overhang.
Orchard Dome, Texas—								
Gulf Production Co.'s No. 34 Moore	3,077	3,153	76	4,389	1932	0	SW	
Keechi Dome, Interior Texas—								
Producers Oil Co.'s No. 1 Barrett & Greenwood	2,162	2,822	660	3,170	1917 (?)	0	SE	
Bethel Dome, Interior Texas—								
Producers Oil Co.'s No. 2 Bruce	3,448	3,520	72	4,306	1929	0	SE	

Filley Again Heads Kans.-Okla. Division

At the annual meeting of the Mid-Continent Oil and Gas Association, Oklahoma-Kansas division, held in Tulsa No-

E. R. FILLEY

vember 21, E. R. Filley was elected to the presidency for the second term, with all other officers also re-elected. Twenty five members were added to the executive committee.

The executive committee authorized the formation of an Oklahoma chapter of the American petroleum industrial committee to work with the national organization headed by Baird H. Markham.

Reports were submitted and other routine business transacted.

Late Fields

OKLAHOMA

Wentz Oil Corp. will test out deeper formations in its No. 2, C NW NW NE Section 31-19-4w, Marshall Pool, Logan County. It was a 2,100-bbl. well at 5,945-53 feet and later produced 980 bbls. initially from sand at 6,178-81 feet. It is now at 6,350 feet, delayed by a fishing job.

The Sinclair Prairie Oil Co.'s No. 1 Phillips, C NE NE NW Section 28-17-4w, flowed 1,142 bbls. in 72 hours and showed 1,000 pounds casing pressure. It was then shut in.

Continental Oil Co. has made location for a test in the C SW NE Section 8-19-20w, Dewey County, western Oklahoma.

KANSAS

Interstate Oil Co.'s test in Section 16-18s-16w, Rush County, found quartzite at 3,441-3,554½ feet and is plugging to abandon.

EAST CENTRAL TEXAS

FORT WORTH, Tex., Nov. 21.—Humble Oil & Refining Co.'s No. 1 Dietz, Simon Sanchez Survey, Freestone County, made drill stem test at 5,284 feet, showing no oil, gas or water. Cored to 5,261 feet and will make another test.

Pipe Line Investigation Secy. Ickes' Next Step

WASHINGTON, D. C., Nov. 21.—Secretary Ickes, as administrator for the oil code, today undertook an investigation into oil pipe lines.

At his press conference he said the study would especially be of "the complaints that pipe lines have exercised undue influence on producers and have made excess profits."

General rate revisions may result, he added.

King Ranch in Texas Biggest Lease Ever Negotiated in U. S. Oil History

By B. D. STEVENSON

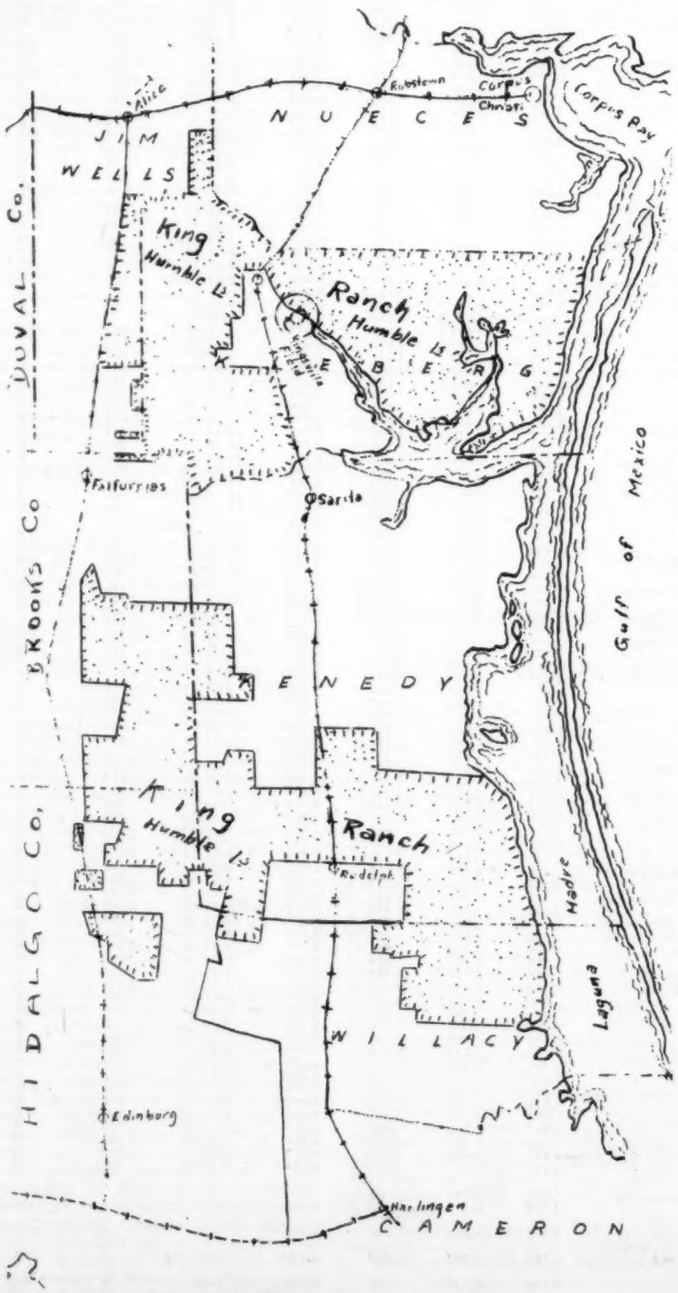
SAN ANTONIO, Tex., Nov. 20.—Probably the biggest lease deal ever consummated in all the United States for oil or gas is that of the Humble Oil & Refining Co. for a 20-year lease on the famous King ranch in Southwest Texas, including acreage greater than the States of Rhode Island or Delaware, an empire by itself of some 1,153,000 acres.

Details of the transaction have never been officially given out but it is well understood that the 20-year lease with the privilege of developing any part of the acreage to oil and gas, was obtained as the consideration of a loan of $3,500,000 without interest secured by mortgage on the ranch. At the end of the 20-year period the Humble is to make selection of such acreage as is found productive and turn the remainder back.

The loan of $3,500,000 pays up back taxes and takes care of a Reconstruction Finance Corp. loan of $1,250,000.

The big King ranch really consists of two main ranches the general outlines of which are shown on the accompanying map. The north ranch is known as the Santa Gertrudis ranch and on it a little west of the town of Kingsville is the palatial King home that replaced one destroyed a few years ago by fire. The area shown on the map from Kingsville south to the north line of Kenedy County was originally in the ranch but was cut up into farms several years ago and sold and is the only acreage sold off. The management of the ranch for years has been adding to its acreage but other than the one tract has not consented to sell off any.

The south ranch is known as El Sauz or "The Willows." In addition to these two larger ranches which comprise a total of about 1,000,000 acres of the holdings, there are smaller tracts in Bee, Goliad and Nueces Counties.



Map of the King ranch, Southwest Texas

The Kingsville Field, a little southeast of the town of Kingsville, was discovered originally by business men of Kingsville organizing and drilling, resulting in the discovery of gas. Later the Humble leased acreage in the immediate territory of the gas production and principally to the east of it and found oil in more or less important quantities in several sands but was never able to develop much production except in a few wells at around 2,250 feet which are still producing, the field being credited in production reports at this time with an average of about 100 bbls. daily.

Over the bulk of the territory included within the King ranches there is practically no surface exposures to aid the geologist and any research work will almost necessarily have to be done with the aid of geophysics.

Large ranch deals have featured operations in Southwest Texas recently. The Humble and other major companies a few years ago bought extensive tracts out of the Duval County Ranch Co. acreage in northwestern Duval and northeastern Webb Counties. This ranch extends down along the county line between Webb and Duval Counties a distance of 20 miles from the north line of the two counties and runs east and west from that extending at some points a distance of 15 miles into Duval County and a great deal of the recent discoveries have been found on that acreage.

More recently the Humble top leased everything and got a contract covering the entire ranch and any leases that expire go to the Humble. This was one feature that stirred drilling activity and resulted in uncovering some new pools, leaseholders being under the necessity of either lapsing the leases or finding production.

Continental Oil Co. recently closed a deal for the entire Driscoll ranch of 53,000 acres.

Earl Frates and associates leased the entire Hagist ranch of some 30,000 acres in northern Duval and southern McMullen Counties.

There have been numerous big acreage blocks leased where the entire transaction was concluded with one fee owner but nothing to match the acreage involved in the big King ranch.

Danciger Companies File Supreme Court Appeal

WASHINGTON, D. C., Nov. 20.—The Danciger Oil & Refining Co. of Texas and its subsidiary, the Petroleum Refractionating Corp., today appealed to the Supreme Court to set aside a decision by a three-judge Federal District Court for northern Texas, sustaining Texas statutes and orders of the Texas Railroad Commission, regulating the oil industry in that State.

The appellants pointed out that since the decision was entered, President Roosevelt, under the National Recovery Act, has approved an oil code regulating the production of oil in Texas and that the State Railroad Commission is now enforcing the Federal oil code.

The two companies nevertheless urged the high court to reverse the Federal District Court, declaring such action was important to protect their future rights should the State Railroad Commission again attempt to enforce the state statutes.

H. H. WESTINGHOUSE DIES

Henry Herman Westinghouse, chairman of the board of Westinghouse Air Brake Co., died Saturday at his home, Floremar, Goshen, N. Y. Death was due to a prolonged illness following a severe fall last December. Mr. Westinghouse was a director of Westinghouse Air Brake Co., Union Switch & Signal Co. and Westinghouse Electric & Manufacturing Co.

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Published Weekly by

THE PETROLEUM PUBLISHING COMPANY

114-16 West Second Street, Tulsa, Oklahoma

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JOHN M. EGAN, General Manager
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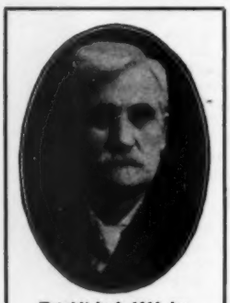

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Price Fixing Out?

Secretary Ickes explains the postponement of hearings and price fixing to give further time for analysis of the effects of the reduction of production.

There never has been any doubt that the administration has clung all along to the belief that if production and demand could be balanced prices would adjust themselves.

The order of October 16 fixing minimum prices, effective as of December 1, was conditioned on a provision that it "may be modified or amended after submission of findings based upon hearings and investigations."

The industry in its anxiety for stabilization may have placed more emphasis on the order than it did upon the qualifying condition which is now found to be all important.

Meanwhile, under the co-operation invited by the hope of stabilization under that order, it has been possible to bring production closer to demand.

But, at the same time, perplexing problems and difficulties have been developing, many arising from the intensely complicated operations of the oil business, and threatening the whole idea of governmental price fixing.

The mass of documentary evidence and statements received by the oil administration, some 500 to 700 briefs and written statements having been filed, and from 150 to 200 persons intending to appear at the hearings, apparently precluded thought of decision by the December 1 date. Even postponement of the hearing for 15 days is evidently considered possibly insufficient since postponement for 90 days is also spoken of.

Meanwhile, of course, the effective date of price fixing has also been postponed, first to January 1, with a broad intimation that after the hearings there may not be any governmental price fixing at all, if in the meantime the balancing of production and consumption stabilizes prices and removes the emergency which dictated the original order of October 16.

Those who have feared governmental control of the oil business will hope that this may be so and if it should be, if the industry can be stabilized by reduction of production and crude runs to stills with a resulting fair return, all may yet be well.

Governmental price fixing was considered only as a last resort, even by those supporting it. If it can be avoided and the same results can be obtained with the industry still running its own business, it will be cause for general congratulation.

But this will not be accomplished unless there is genuine and active co-operation by the individual units in the business behind the new policy.

Profit and Taxes

It was to be expected that politicians in search of something to talk about in these days of muffled partisanship would sooner or later pounce upon the oil industry. It used to be a never failing standby for ranters.

Hence it was not surprising to find an Iowa senator appearing on the front pages of the newspapers this week with a wild outcry about some of the oil companies making profits in the past quarter, and arguing therefrom that gasoline prices are extortionate.

Perhaps it is because the senator is a left-over that he overlooked the fact that the whole purpose of the "New Deal" is to enable industry to make profits instead of the demoralizing losses that marked the depression period.

It may be noted, however, that he is not heard objecting to the farmers of Iowa being assisted to better prices and profits, even though consumers have to pay more for what they eat.

In all fairness, is not the oil man as much entitled to stop doing business at a loss and make a profit as the farmer or any other man who has been struggling to keep his head above water during the past four years?

That is all there is to the gasoline price situation. The idea of the oil code, as of all other codes, was to enable industries losing money to stabilize their business so they could create employment and thus restore profit and prosperity.

The fact that some oil companies are now operating in the black instead of the red should be welcomed as a sign that times are getting better, that this great industry, the second largest in the country, is leading the way out of the depression.

If every consumer of any product is to follow the example of this Iowa statesman and rush into print denouncing any business that hereafter shows a profit, where can we expect to land?

It is characteristic of political gabble about gasoline prices that no mention is ever made by the politicians of the heavy weight saddled upon the consumer in the form of gasoline taxes.

The politician's sympathy for the oppressed consumer never leads him to lighten that tax. On the contrary, he is all for increasing it, not only for the original purpose, road making, but for any purpose, even general expenses that should be borne by the general taxpayer and not by one class.

Yet, while the Iowa senator was ululating about the enormity of a few oil companies making a profit he does not seem to have noted that the Federal gasoline tax alone took in during the third quarter $15,000,000 more than the profits of which he complains. And State taxes on gasoline in the same period amounted to $130,000,000 in addition to the Federal taxes.

If the consumer needs to be aroused it ought to be about the vast sum taken from him by the political tax leviers rather than the fact that after years of depression a few oil companies are now showing a profit.

Gasoline prices today are no higher than the average for the past 20 years. Actually the oil industry is getting less for its product but the increase in State and Federal taxes on gasoline is where the difference is.

The additional half cent Federal tax will, according to the act, automatically be dropped following the repeal of prohibition, to be replaced by revenue from liquor. It will be interesting to watch whether the political "friends" of the consumer will give up this "easy money" without making an effort to reimpose the tax.

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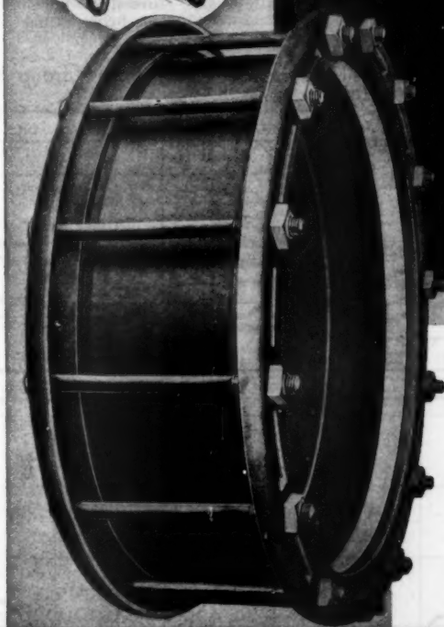

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DRESSER COUPLINGS DOMINATE

Group 3 Market Spiritless, With Few Changes in Prices, While Jobbers Await Developments

By T. F. SMILEY

Although an assortment of conditions operated to depress gasoline prices in the Oklahoma (Group 3) territory in the last week, the total of their influence resulted only in a spiritless market without noticeably affecting actual quotations.

Chief among the enervating factors were the continued uncertainty as to what action the Government in Washington ultimately will take with reference to control of prices and the information that with the removal January 1, 1934, of the emergency Federal tax of one-half cent a gallon there will be no refund of tax already paid on unsold stocks of gasoline which may be held on that date. Added to these were the seasonal slowing up of gasoline consumption and further offerings of low-octane material, seeking an outlet.

Inquiry at the sales tax unit of the Internal Revenue Department in Washington elicited the statement that jobbers with stocks of gasoline on their hands at the close of the year will receive no return of the half-cent tax which they have paid on such stocks, unless the President in his proclamation abolishing the tax directs otherwise. That the President will do that is not regarded as even a remote possibility. It is pointed out that when this half-cent Federal tax was added last June 17 to the 1-cent tax already in force jobbers were not required to pay it on stocks which they held and that the Government's plan of not refunding the tax on gasoline unsold on January 1 cannot be regarded as unfair.

Jobbers Want Empty Tanks

The inevitable effect of the Revenue Department's announcement is to create a determination on the part of jobbers to have their tanks as near empty as possible on December 31, since any gasoline they may be holding will be worth one-half cent a gallon less the next day. Thus all buying for the remainder of the year will be done with this end in view and it is expected to act as a curb on any disposition to go into the market on a large scale.

Postponement by Secretary Ickes last Monday of the price-control program from December 1, the date originally fixed, to January 1, with likelihood it will not be adopted at all, had little observable effect on the market. If it had any influence it was believed to be that of a depressant rather than a restorative. It offered no incentive to fill storage, jobbers and marketers said. When the price-control order was issued by Secretary Ickes October 16, fixing a schedule of prices for gasoline about 1½ cents higher than those ruling in the market at the time, there was at first an impulse on the part of jobbers to buy heavily in order to profit by the increased prices expected to go into effect December 1 under the Ickes order.

Developments since then have had the effect of keeping buyers out of the market instead of impelling them to go into it. Scepticism soon was expressed as to whether the price-fixing plan really would be put into effect.

Scepticism crystallized into conviction that no price-control program will be enforced when it was directed this week by Secretary Ickes that "the tentative date for putting into effect any price schedules be postponed at this time until January 1, 1934, subject to further extension or suspension."

Free offerings of low octane material from the North Texas, Panhandle and Oklahoma areas were recognized as a factor, though a minor one, in discouraging any upward tendency of the gasoline market.

There is a general feeling that the stage is set for a sharp upturn in gasoline prices with the turn of the year.

Natural gasoline sagged the latter part of last week and prices receded an eighth of a cent throughout almost the entire list. New buying came into the market early this week, however, and the price for 26-70 grade earlier quoted at 4⅞ cents, snapped back to 5 cents. The other grades, however, failed to go up in sympathy, though there were believed to be symptoms of strengthening, helped by the advent of colder weather.

Furnace Oils Strong

Furnace oils and tractor fuels strengthened appreciably and quotations on the whole list were an eighth of a cent higher than in the preceding week. The whole group of gas oils and fuel oils showed increasing strength. The prices for burning oils in the Shreveport, La., and El Dorado, Ark., were slightly softer than those of the Group 3 territory, but not enough to affect the general structure. Open offerings of good grade distillates and fuel oils were described as scarce.

The kerosene market was somewhat firmer, its tone being improved, it was said, by the strong demand for distillates.

Refined Oil Market Barometer

A lethargic gasoline market, with price recessions in several areas, marked the refined oil trade the last week. At the same time there was increasing strength in the demand for fuel oils and distillates, with stiffening of prices. Kerosene was steady, with a disposition to increasing firmness. Export demand is tightening the market in steam refined and bright stocks. Neutrals were strong. While little noteworthy buying is foreseen in the general market during the remainder of 1933, a sharp upturn is predicted with the turn of the year.

Mid-Continent—Further softness in natural gasoline. Gasoline weak.

East Coast—Wax strong, but most of the market, particularly gasoline, weak.

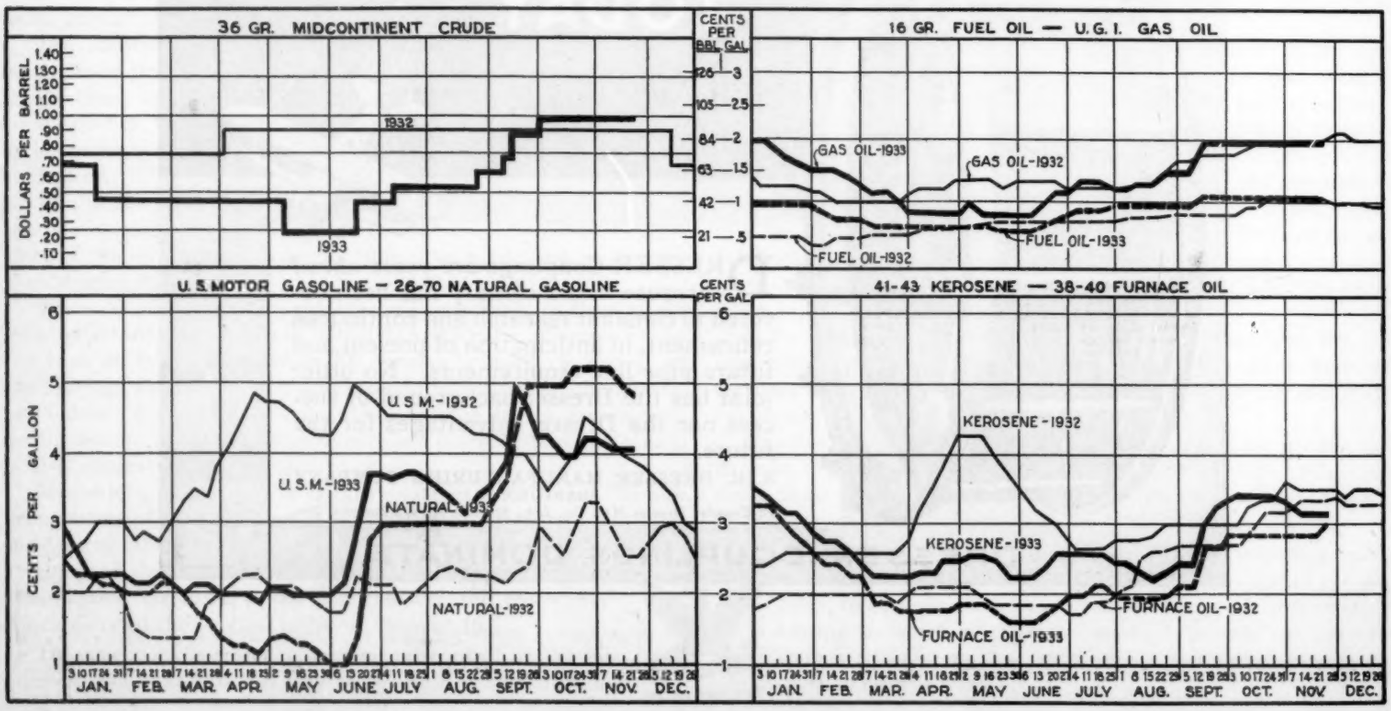
Gulf Coast—General market inactive, with expected winter demand for higher octane gasolines failing to appear.

Pennsylvania—Refiners expecting advances in overhead and residual lub products. General market firm.

California—Gasoline price war resulting in still lower prices. Pale and red oils up.

Chicago—Gasoline spotty, but better tone in heating oils. Jobbers out of market, awaiting developments.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



Hearings in Washington and Unsettled Exchange Situation Create Slow Market on East Coast

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

NEW YORK, Nov. 20. — With the hearings having to do with the price provisions of the oil industry's code pending at Washington and an unsettled exchange situation in foreign markets all indications today pointed to a slow refinery market over the balance of the week in the East Coast area. Uncertainty as to the final outcome of the Washington hearings has reduced domestic trading in all refinery products to routine shipments and a similar situation exists in the export markets due partially to the steady devaluation of the dollar as a medium of exchange in the sale and purchase of refined petroleum products.

Spot trading has been so slow due to these conditions over the past week, there were indications of weakness in the solid front of prices that has been maintained on the principal products by practically all the refiners in this territory over the past six weeks. The weakness was most apparent in the case of gasoline. Some of the sellers who have been maintaining prices of from one-fourth to one-half cent above the generally accepted low of the market for the two principal grades of U. S. Motor gasoline, have reduced their quotations to the lower levels and are now more active factors in the small spot business that is available.

Although the volume is still not large enough to disturb the general market, small offerings of low octane gasoline at distress prices have been reported, the lowest of actual sales being 5⅝ cents for a U. S. product with an octane rating under 59. This material is reported to have originated in shipments from the Gulf Coast and also one eastern refinery. Other refiners with plants and terminals in the New York and Philadelphia harbor areas are maintaining a low of 6¼ cents for 60-65 octane material and 6½ cents for 65 octane and above in tank car shipments. Jobbers are not increasing their purchases at these prices and there were indications of a general seasonal contraction in their orders over the past week.

Important Devaluation

Aside from the possible developments in regard to price control as a result of the Washington hearings there are those among the sellers who are predicting higher prices for gasoline as a result of the Government's efforts to increase commodity prices through the devaluation of the dollar.

It is contended that this situation has particular importance in foreign markets. The United States dollar, British pound and the French franc are the monetary units largely used as media of exchange in the sale of petroleum products. The devaluation of the first named with a corresponding enhancement in the purchasing power of the latter two so far as the purchase of American goods is concerned, should, it is believed, widen the foreign markets for crude oil and refinery products produced in the United States. It is claimed that the large slump in petroleum exports from United States starting in 1930 and extending through 1932 was partially due to the decline in the British pound after Great Britain went off the gold standard and now that the monetary situation has been reversed some of this business, it is felt, should return to producers of crude oil and refiners in this country.

It should be stated here there are those among the trade that minimize the significance of the developments just outlined as having any permanent importance in the petroleum markets of this country. They feel that the ability of Russia and Rumania to maintain production will be the determining factor as to the decrease or increase in exports from this country to Europe with South American and the Dutch East Indies production the controlling factors in the markets conveniently served by those countries.

Such discussions center around the merits of the Government's monetary program with wide differences of opinion existing among those connected with all divisions of the petroleum business. It is mentioned here because there are important factors in the petroleum industry of this section who are basing their operations on the confident expectation that petroleum prices will benefit in any final program adopted by the Government to boost prices of commodities.

Government Report

The Bureau of Mines report for September which became available during the past week makes possible a comparison of production with September, 1932, and also the stocks at at the start of October.

A summary of the report for the East Coast territory follows:

EAST COAST REFINERY OPERATIONS

Production (Bbls.)

	Sept., '33	Sept., '32
Crude to stills	13,870,000	12,857,000
Gasoline	5,849,000	5,169,000
Kerosene	703,000	602,000
Gas oil and distillate	1,108,000	1,537,000
Residual fuel oils	3,826,000	3,942,000
Lubricants	673,000	477,000
Wax (lbs.)	22,400,000	15,120,000
Coke (tons)	16,400	16,300
Asphalt (tons)	94,400	105,100

Stocks (October 1)

Gasoline	14,041,000	13,848,000
Kerosene	2,251,000	1,542,000
Gas oil and distillate	5,105,000	3,885,900
Residual fuel oil	4,685,000	5,657,000
Lubricants	2,282,000	2,586,000
Wax (lbs.)	20,507,000	49,600,000
Coke (tons)	57,200	49,690
Asphalts (tons)	80,100	116,400

These data are of value in explaining what took place in markets during September and also as a basis for predictions regarding future market developments. The figures show that gasoline prices in this and other refining areas were advanced during September despite a relatively high production rate which brought additions to inventories although September normally is a month in which stocks are reduced.

Stocks of gasoline on October 1 were slightly greater than the same date of 1932 and since that time the increase over last year has been increased according to the weekly reports of the American Petroleum Institute.

Based on September reports, kerosene production in this territory is substantially higher than it was a year ago and stocks at refineries on October 1 approximately 750,000 bbls. greater, indicating a surplus which does not point to any scarcity in this territory during the next few months. The same situation applies to gas oil and distillate. A year ago these products were scarce but due to the increased production brought about by higher prices supplies on October 1 were 1,250,000 bbls. greater than on the same date in 1932.

In contrast to this situation in gas oils and distillates, the production of residual fuel oils is less than last year and stocks at refineries on October 1 were 300,000 bbls. less than the same date in 1932. This decrease in supply with an increase in demand accounts for the fact that shipments of California heavy fuels to the East Coast have increased in recent weeks.

The production of lubricating oils at East Coast refineries during September was more than 40 per cent greater than in September, 1932. For the country as a whole production of lubricants was less the first half of 1933 than it was in the same period in 1932 and stocks decreased. Despite the large increase in output at East Coast refineries, stocks on October 1 were approximately 300,000 bbls. less than the year previous.

Wax Strong

The figures explain the continued strength in the petroleum wax market.

(Continued on Page 34)

American Petroleum Institute Weekly Refinery Statistics

Figures below reported for week by American Petroleum Institute. (1) Per cent refinery capacity represented. (2) Daily average crude runs to stills. (3) Total motor fuel stocks. (4) Gas oil and fuel oil stocks. All figures in 42-gallon barrels.

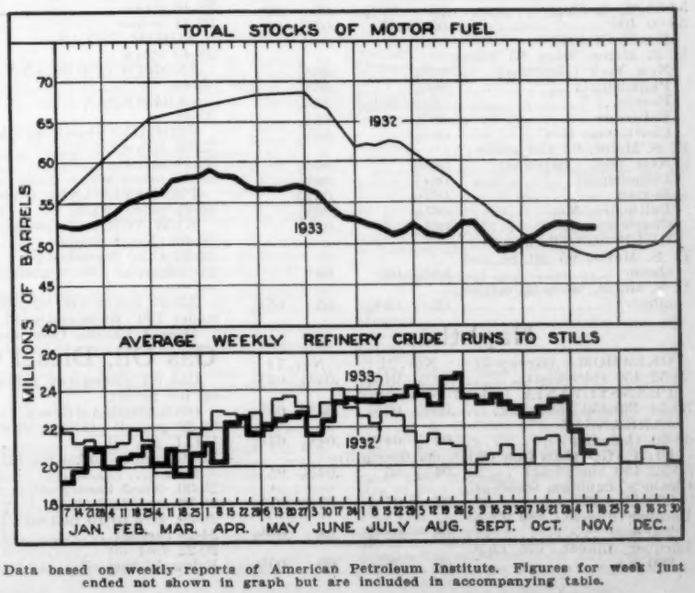
Week Ending November 18, 1933, Compared to Week Ago

	Week Ending Nov. 18, 1933				Week Ending Nov. 11, 1933			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	446,000	14,298,000	8,440,000	100.0	416,000	14,497,000	8,847,000
Appalachian	92.6	97,000	2,106,000	1,015,000	92.6	91,000	2,085,000	992,000
Ind., Ill., Ky.	97.3	333,000	7,044,000	6,208,000	97.3	292,000	7,160,000	6,165,000
Okla., Kans., Mo.	82.1	238,000	5,589,000	4,214,000	82.1	219,000	5,385,000	4,240,000
Inland Texas	60 2	86,000	1,273,000	1,775,000	62.2	83,000	1,287,000	1,793,000
Texas Gulf	98.1	415,000	5,396,000	7,206,000	98.1	392,000	5,175,000	6,897,000
Louisiana Gulf	100.0	85,000	1,207,000	2,123,000	100.0	85,000	1,284,000	1,994,000
N. La. and Ark.	92.6	52,000	229,000	588,000	92.6	49,000	226,000	601,000
Rocky Mtn.	78.8	40,000	859,000	725,000	78.8	34,000	838,000	727,000
California	96.9	404,000	14,101,000	95,234,000	96.9	423,000	14,305,000	95,785,000
Total U. S.	92 4	2,196,000	52,102,000	127,528,000	92.4	2,084,000	52,242,000	128,041,000

Total motor fuel stocks, Bureau of Mines basis, 53,900,000 bbls.

Week Ending November 18, 1933, Compared to Year Ago

	Week Ending Nov. 18, 1933				Week Ending Nov. 19, 1932			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	446,000	14,298,000	8,440,000	99.1	424,000	11,914,000	9,290,000
Appalachian	92.6	97,000	2,106,000	1,015,000	95.0	87,000	1,637,000	760,000
Ind., Ill., Ky.	97.3	333,000	7,044,000	6,208,000	97.5	280,000	6,075,000	4,020,000
Okla., Kans., Mo.	82.1	238,000	5,589,000	4,214,000	88.4	196,000	4,513,000	3,011,000
Inland Texas	60 2	86,000	1,273,000	1,775,000	67.5	102,000	1,333,000	2,133,000
Texas Gulf	98.1	415,000	5,396,000	7,206,000	98.2	406,000	5,496,000	9,488,000
Louisiana Gulf	100.0	85,000	1,207,000	2,123,000	97.3	88,000	1,205,000	3,455,000
N. La. and Ark.	92.6	52,000	229,000	588,000	94.6	48,000	218,000	514,000
Rocky Mtn.	78.8	40,000	859,000	725,000	91.4	33,000	1,101,000	439,000
California	96.9	404,000	14,101,000	95,234,900	94.6	439,000	14,872,000	100,236,000
Total U. S.	92 4	2,196,000	52,102,000	127,528,000	93.2	2,103,000	48,364,000	133,346,000



Data based on weekly reports of American Petroleum Institute. Figures for week just ended not shown in graph but are included in accompanying table.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

EXCLUSIVE OF TAXES

The following quotations are exclusive of the Federal excise taxes of 1½ cents a gallon on gasoline and 4 cents on lubricating oils, which became effective June 17, 1933.

Refinery Gasolines

	Nov. 21		Nov. 14	
OKLAHOMA (Group 3)—				
*U. S. Motor grades:				
Third grade	.04⅛	.04⅜	.04¼	.04⅜
Regular	.04⅞	.05⅜	.04⅞	.05⅜
Premium	.05½	.05¾	.05½	.05¾
60-62 400 grades:				
Third grade	.04¼	.04½	.04¼	.04½
Regular	.05	.05½	.05	.05½
Premium	.05⅝	.05¾	.05⅝	.05¾
64-66 390	.04⅝	.05	.04⅝	.05
64-66 375	.04⅞	.05⅛	.04⅞	.05⅛
68-70 350	.05⅛	.05¼	.05⅛	.05¼
NORTH TEXAS—				
U. S. Motor grades:				
Third grade	.04	.04⅛	.04	.04⅛
Regular	.04½	.04⅞	.04½	.04⅞
Premium	.05¼	.05½	.05¼	.05½
60-62 400	.04¼		.04¼	
64-66 390	.04¾		.04¾	
64-66 375	.05		.05	
64-66 360	.05⅛	.05¼	.05⅛	.05¼
†NORTH LOUISIANA—				
U. S. Motor grades:				
Third grade	.04¾		.04¾	
Regular	.05½		.05½	
Premium	.06		.06	
60-62 400	.04½		.04½	
†ARKANSAS—				
U. S. Motor grades:				
Third grade	.04¾		.04¾	
Regular	.05⅝		.05⅝	
Premium	.06		.06	
CHICAGO (based on Oklahoma Group 3)—				
U. S. Motor grades:				
Third grade	.04	.04¼	.04⅛	.04¼
Regular	.04⅞	.05	.04⅞	.05
Premium	.05¼	.05½	.05¼	.05½
60-62 400	.04⅛	.04⅜	.04¼	.04⅜
64-66 375	.05	.05¼	.05	.05¼
68-70 360	.05¼	.05½	.05¼	.05½
Aviation fighting grade	.05⅝	.05⅞	.05⅝	.05⅞

*Octane Ratings—The following octane ratings apply to the three grades of U. S. Motor gasoline: Regular 60-64 octane number, premium 65 and above octane number; third grade, 59 and below octane number. Octane ratings determined by C.F.R. Motor Method.

PENNSYLVANIA (inland refineries)—				
58-62 U. S. Motor:				
Below 60 octane	.05½		.05½	.05¾
60-64.9 octane	.06⅝			
65-69.9 octane	.07			
70 octane and higher	.07⅜			
64-66 375	.06	.06¼	.06	.06¼
68-70 350	.06½	.06¾	.06½	.06¾
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.05	.06½	.06	.07
58-60 400	.06	.07	.07¼	.08¼
EAST COAST—				
U. S. Motor, below 65 octane:				
New York (Bayonne)	.06¼		.06¼	
Philadelphia	.06¼		.06¼	
Boston	.0640	.06½	.06½	
Baltimore	.06¼		.06¼	
Charleston, S. C.	.06¼		.06¼	
U. S. Motor, 65 and above:				
New York (Bayonne)	.06½		.06½	
Philadelphia	.06½		.06½	
Boston	.0670		.0670	
Baltimore, Md.	.06½		.06½	
Charleston, S. C.	.06½		.06½	
GULF COAST (domestic)—				
U. S. Motor, 65 octane and above	.05¾	.06	.06	
U. S. Motor, below 65 octane number	.05	.05¼	.05	.05¼

Naphthas

OKLAHOMA (Group 3)—	Nov. 21		Nov. 14	
50-52 450 (blending)	.04¼	.04½	.04¼	.04½
PENNSYLVANIA (inland refineries)—				
50-54 430-450 (blending)	.05⅜	.05⅝	.05⅜	.05⅝
†ARKANSAS—				
48-50 (blending)	.04½	.04¾	.04½	.04¾
CHICAGO (based on Oklahoma Group 3)—				
50-52 450 (blending)	.04½	.05	.04⅝	.05
Cleaners' naphtha, 56-58 gr., 200 i.b.p.-320 e.p.	.07	.07¼	.07	.07¼
Lacquer diluent, 180 i.b.p.-250 e.p.	.08	.08¼	.08	.08¼
Lacquer diluent, 140 i.b.p.-200 e.p.	.09	.09¼	.09	.09¼
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.07	.07¼	.06¾	.07
Stoddard solvent, 300 i.b.p.-410 e.p., over 83° flash	.06¼	.06½	.06¼	.06½
Pet. thinner, 290-300 i.b.p.-415 e.p. over 83° flash	.06	.06¼	.06	.06¼
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.06⅜	.06⅝	.06⅜	.06⅝
Petroleum spirits	.05⅜	.05½	.05⅜	.05⅞

Natural Gasolines

	Nov. 21		Nov. 14	
OKLAHOMA (Group 3)—				
Grade 18-55	.05⅞	.06⅛	.06	.06¼
Grade 26-70	.05		.05	.05⅛
Grade 30-70	.04⅝	.04¾	.04¾	.04⅞
Low vapor pressure grades:				
15 lb. v.p. (max.)	.06⅛	.06½	.06⅜	.06½
11 lb. v.p. (max.)	.06½	.06¾	.06½	.06¾
NORTH TEXAS—				
Grade 18-55	.05⅞	.06	.05⅞	.06
Grade 26-70	.04⅞	.05	.05	.05¼
Grade 30-70	.04⅝	.04¾	.04⅝	.04¾
Low vapor pressure grades:				
15 lb. v.p. (max.)	.06⅛	.06¼	.06⅛	.06¼
11 lb. v.p. (max.)	.06⅜	.06½	.06⅜	.06½
NORTH LOUISIANA—				
Grade 26-70	.05⅜		.05½	
CALIFORNIA—				
75-85 375	.05	.06	.06	.07

Kerosenes

(All kerosenes water white)

	Nov. 21		Nov. 14	
OKLAHOMA (Group 3)—				
41-43	.03¼	.03⅜	.03¼	.03⅜
42-44	.03½	.03¾	.03½	.03¾
NORTH TEXAS—				
40-41	.03⅛	.03¼	.03⅛	.03¼
41-43	.03¼	.03⅜	.03¼	.03⅜
†NORTH LOUISIANA—				
41-43	.03¾	.04	.03¾	.04
42-44	.04		.04	
†ARKANSAS—				
41-43	.03¾		.03¾	
PENNSYLVANIA (inland refineries)—				
45	.04¾	.05	.04¾	.05
46	.05	.05¼	.05	.05¼
47	.05¼	.05½	.05¼	.05½
CHICAGO (based on Oklahoma Group 3)—				
41-43	.03¼	.03½	.03⅜	.03½
42-44	.03⅜	.03⅝	.03½	.03⅝
*CALIFORNIA—				
38-40 high burning test	.04¼	.04¾	.04¼	.04¾
NEW YORK (Bayonne, N. J.)—				
41-43	.05¼	.05½	.05¼	.05½
GULF COAST (domestic)—				
41-43 water white	.04½	.04¾	.04½	.04¾

*For Pacific Coast consumption.
†For Arkansas, Louisiana and Mississippi delivery.

Furnace Oils and Tractor Fuels

	Nov. 21		Nov. 14	
OKLAHOMA (Group 3)—				
32-36 straw	.03	.03⅛	.02⅞	.03
36-38 straw	.02⅞	.03	.02¾	
38-40 straw	.03	.03⅛	.02⅞	.03¼
39-41 prime	.03⅛	.03¼	.03	
NORTH TEXAS—				
38-40 straw	.02⅝	.02¾	.02⅝	.02¾
†NORTH LOUISIANA—				
36-40	.03		.03	
†ARKANSAS—				
32-36	.03		.03	
CHICAGO (based on Oklahoma Group 3)—				
32-36 straw	.03	.03⅛	.02⅞	.03
38-40 straw	.03	.03⅛	.02⅞	.03⅛
38-40 prime white	.03⅛	.03¼	.03	.03⅛
PENNSYLVANIA (inland refineries)—				
40-41 prime white	.04⅜	.04½	.04⅛	.04¼
NEW YORK (Bayonne, N. J.)—				
36-40 (No. 1 grade)	.05½		.05½	
32-36 (No. 2 grade)	.04½		.04½	
21 industrial (No. 4 grade)	.04		.04	

Above prices are for distillate oils of zero cold test under 190° flash and good odor.
†For Arkansas, Louisiana and Mississippi delivery.

Gas Oil, Diesel Oil and Fuel Oil

Gas oil quoted per gallon basis; Diesel oil and fuel oil per barrel.

	Nov. 21		Nov. 14	
OKLAHOMA (Group 3)—				
32-36 gas oil cracking stock	.01⅞	.02⅛	.01⅞	.02⅛
U.G.I. gas oil	.02		.02	
32-36, zero to 15 gas oil, high flash	.02¼	.02⅜	.02¼	.02⅜
28-30, No. 3 burner oil	1.05	1.10	1.00	1.05
28-30 zero fuel oil	.95	1.00	.90	.95
26-30, zero to 10 fuel oil	.85	.95	.82½	.95
24-26 fuel oil	.62½	.65	.62½	.65
20-22 fuel oil	.55	.60	.55	.60
Below 16 fuel oil	.50	.55	.50	.55
NORTH TEXAS—				
32-36 gas oil, industrial	.02		.02	
22-26 fuel oil	.57½	.62½	.57½	.62½
Below 20 fuel oil	.47½	.50	.47½	.50
†NORTH LOUISIANA—				
32-36 gas oil, zero	.03		.03	
14-16 fuel oil	.55	.60	.55	.60
†ARKANSAS—				
30-32 gas oil, zero	.02¾		.02¾	
32-36 furnace oil	.03		.03	
14-16 fuel oil	.50		.50	
CHICAGO (based on Oklahoma Group 3)—				
32-36 gas oil, industrial	.01⅞	.02	.01⅞	.02
28-30 (zero) fuel oil	.92½	1.02½	.90	1.00
26-28 (zero) fuel oil	.77½	.82½	.77½	.82½
22-26 (zero) fuel oil	.65	.70	.65	.70
18-22 (zero) fuel oil	.60	.65	.60	.65
Below 18 fuel oil	.40	.45	.40	.45

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel less in all areas than shown in above tables.

†For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—				
36-40	.04⅛	.04¼	.04⅛	.04¼
CALIFORNIA—				
30-34 gas oil per bbl.	.90	1.05	.90	1.05
27 plus Diesel	.90	1.00	.90	1.00
15-19 bunker (at tidewater)	.55	.65	.55	.65
15-19 (cargo lots)	.55	.65	.55	.65
15-19 (tank cars)	.45	.65	.45	.65
GULF COAST—				
28-30 gas oil	.03½		.03½	
28-30 Diesel	1.80		1.80	
Bunker C (bulk cargoes)	.92½	.95	.92½	.95
Bunker C (bunkers)	.95		.95	
NEW YORK (Bayonne, N. J.)—				
28 plus, gas oil	.04½		.04½	
28-30 Diesel (lighterage 6½ cents per bbl.)	1.95		1.95	
28-30 Diesel (tank cars)	.04½		.04½	
*Bunker C (to ocean-going ships in N. Y. harbor)	1.10		1.10	

*Lighterage charge 5 cents per barrel additional.

Petroleum Coke*

Prices per ton f.o.b. refineries in Chicago area.

	Nov. 21		Nov. 14	
Pile run (screenings)	4.50		4.50	
Direct from still	5.50		5.50	
Lump and egg	7.50	7.75	7.50	7.75

*Refineries will absorb freight to 80 cents a ton.

Neutral Oils

(Vis. at 100° F. unless otherwise stated, and color N.P.A.)

	Nov. 21		Nov. 14	
OKLAHOMA (Group 3)—				
Zero to 10 Cold Test:				
150-3	.07¼	.07½	.07¼	.07½
180-3	.08½	.08¾	.08½	.08¾
180-4	.08¼	.08½	.08¼	.08½
200-3	.09	.09¼	.09	.09¼
200-4	.08¾	.09	.08¾	.09
240-3	.11	.11¼	.11	.11¼
240-4	.10¾	.11	.10¾	.11
280-3	.12	.12¼	.12	.12¼
280-4	.11½	.11¾	.11½	.11¾
300-3½	.12¾	.13	.12¾	.13
350-3½	.13¾	.14	.13¾	.14
400-4	.14¾	.15	.14¾	.15
500-4½	.15¾	.16	.15¾	.16
100-2 paraffin oil	.05¼	.05½	.05¼	.05½
15-30 Cold Test:				
200-3	.08¼	.08½	.08¼	.08½
200-4	.08	.08¼	.08	.08¼
240-3	.10¼	.10½	.10¼	.10½
240-4	.10	.10¼	.10	.10¼
280-3	.11¼	.11½	.11¼	.11½
280-4	.11	.11¼	.11	.11¼
GULF COAST—				
Pale Oils:				
200-3	.06¼	.06½	.06¼	.06½
300-3	.07	.07½	.07	.07½
500-3½	.07¾	.08¼	.07¾	.08¼
750-3½	.08½	.09	.08½	.09
1,200-3½	.09⅞	.09½	.09⅞	.09½
2,000-4	.10	.10½	.10	.10½
Red Oils:				
200-5-6	.05½		.05½	
300-5-6	.06	.06½	.06	.06½
500-5-6	.06¾	.07¼	.06¾	.07¼
750	.07½	.08	.07½	.08
1,200-5-6	.08¼	.08¾	.08¼	.08¾
2,000-6 plus	.09½	.09¾	.09½	.09¾
CALIFORNIA—				
Pale Oils:				
100-2½-3	.23	.25	.21	.23
200-2½-3	.23	.25	.21	.23
300-3-3½	.23	.25	.21	.23

350-3-4	.23	.25	.21	.23
400-3-4	.23	.25	.21	.23
450-3-4	.23	.25	.21	.23
550-3-4	.23	.25	.22	.24
600-3-4	.23	.25	.22	.24
Red Oils:				
200-4-5	.23	.25	.21	.23
300-5-6	.23	.25	.21	.23
350-5-6	.23	.25	.21	.23
400-5-6	.23	.25	.21	.23
450-5-6	.23	.25	.21	.23
500-5-6	.23	.25	.21	.23
600-5-6½	.23	.25	.22	.24
700-6½ plus	.23	.25	.22	.24
750-6½ plus	.23	.25	.23	.25
900-6½ plus	.23	.25	.23	.25
PENNSYLVANIA—				
150 vis. at 70° F., No. 3, 400-405:				
Zero pour test	.16	.16½	.16	.16½
10 pour test	.15½	.15¾	.15½	.15¾
15 pour test	.14	.14¼	.14	.14¼
25 pour test	.13	.13¼	.13	.13¼
180 vis. at 70° F., No. 3, 25 pour test	.16¾	.17	.16¾	.17
200 vis. at 70° F., No. 3:				
Zero pour test	.21½	.21¾	.21½	.21¾
10 pour test	.20½	.20¾	.20½	.20¾
15 pour test	.19½	.19¾	.19¼	.19¾
25 pour test	.19¼	.19½	.19¼	.19½

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	Nov. 21		Nov. 14	
630 light green	.09½	.12	.09½	.12
600 light green S.R.	.07	.09	.07	.09
600 dark green S.R.	.05	.07	.05	.07
Bright Stocks:				
190-200 D	.24	.25	.24	.25
150-160 D, 0-10	.22¼	.22½	.22¼	.22½
150-160 D, 10-25	.21¾		.21¾	
150-160 D, 25-40	.21¼		.21¼	
150-160 E	.20½		.20½	
PENNSYLVANIA—				
600 S.R.	.16	.16¼	.16	.16¼
650 S.R.	.18	.18¼	.18	.18¼
600 Pennsylvania flash	.19	.19¼	.19	.19¼
650 D filtered	.23¾	.24	.23¾	.24
600 E filtered	.19¼	.19½	.19¼	.19½
Pennsylvania Grade bright stock:				
No. 8 color, 145-50 at 210; 540-550 flash:				
10 pour test	.27½	.27¾	.27½	.27¾
15 pour test	.26	.26½	.26	.26½
25 pour test	.25¼	.25¾	.25¼	.25¾

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	Nov. 21		Nov. 14	
124-126 white crude scale	.03¾		.03¾	
PENNSYLVANIA—				
122-124	.04⅛		.04⅛	
124-126	.04¼	.04½	.04¼	.04½
NEW YORK HARBOR—				
124-126 crude scale	.04	.04⅛	.04	.04⅛
120-122 fully ref'd (a.m.p.)	.0430		.0430	
123-125 fully ref'd (a.m.p.)	.0445		.0445	
125-127 fully ref'd (a.m.p.)	.0455		.0455	
130-132 fully ref'd (a.m.p.)	.0495		.0495	
133-135 fully ref'd (a.m.p.)	.0555		.0555	
135-137 fully ref'd (a.m.p.)	.0580		.0580	
Petrolatum in barrels in carload lots:				
Dark green	.01⅞	.02	.01⅞	.02
Amber	.02¾	.03	.02¾	.03
Extra amber	.03	.03¼	.03	.03¼
Lily white	.06¾	.06⅞	.06¾	.06⅞
Snow white	.07¾	.07⅞	.07¾	.07⅞
Cream	.05⅝	.05¾	.05⅝	.05¾
CHICAGO (f.o.b. switching district)*—				
122-124	.0440	.0450	.0440	.0450
125-127	.0465	.0475	.0465	.0475
127-129	.0480	.0490	.0480	.0490
130-132	.0540	.0550	.0540	.0550
132-134	.0565	.0575	.0565	.0575

*Cents per pound on carlot orders in burlap bags of 225 lbs. approx. Add 3° F., a.m.p.

Export Prices

GASOLINE

GULF COAST—	Nov. 21	Nov. 14
U. S. Motor	.05⅞ .06	.05⅞ .06

60-62 400	.05¾		.05¾	
61-63 390	.05¾		.05¾	
64-66 375	.05½	.05⅝	.05½	.05⅝
LOS ANGELES, CALIF.—				
U. S. Motor grades:				
53-55 octane	.04½	.05	.04½	.05
55-65 octane	.05	.05¼	.05	.05¼
65-67 octane	.05½	.06	.05½	.06
67-69 octane	.06¼	.06¾	.06¼	.06¾
Above 69 octane	.07	.08	.07	.08
58-60 400 endpoint	.05¼	.06¼	.05¼	.06¼
KEROSENE				
GULF COAST—				
41-43 prime white	.04¼		.04¼	
41-43 water white	.04⅜		.04⅜	
44 water white	.04⅜			
LOS ANGELES, CALIF.—				
41-43 water white	.03¾	.04¼	.03¾	.04¼
LUBRICANTS				
NEW YORK (f.a.s. in bbls.)—				
600 Warren E	.25½	.26½	.25½	.26½
600 S.R. unfiltered	.22½	.23½	.22½	.23½
650 S.R. unfiltered	.24½	.25½	.24½	.25½
600 flash S.R.	.25½	.26½	.25½	.26½
630 flash S.R.	.29½	.30½	.29½	.30½
Bright stock, No. 8 color	.31½	.32½	.31½	.32½
Bright stock, No. 6½ color, dil.	.30½	.31½	.30½	.31½
NEUTRALS				
NEW YORK—Pale Engine Oil, Bulk (vis. at 100)—				
100-2½	.07½	.08	.07½	.08
180-3¼	.12	.13	.12	.13
230-3¾	.13	.14	.13	.14
Red Engine Oil, Bulk (vis. at 100):				
200-6	.07½	.08½	.07½	.08½
250-6	.08	.08¾	.08	.08¾
300-6½	.09	.09½	.09	.09½
PARAFFIN WAX (Fully Refined)				
NEW YORK (prices per pound)—				
120-122 a.m.p.	.04¼		.04¼	
123-125 a.m.p.	.04⅝		.04⅜	
125-127 a.m.p.	.04½		.04½	
130-132 a.m.p.	.05		.05	
133-135 a.m.p.	.05½		.05½	
135-137 a.m.p.	.05¾		.05¾	

Crude Oil Gravity Table

Degrees gravity—	1 Oklahoma and Kansas	2 North Texas, Central Texas and East Central Texas	3 North Louisiana and Arkansas	4 Gray County, Texas	5 Carson, Hutchinson and Moore Counties, Texas	6 Conroe, Texas	7 Salt Creek, Wyo.	8 Gulf Coast, Texas and Louisiana	9 Gulf Coast, Texas and Louisiana	10 Caddo, Louisiana	11 Sabine-DeSoto, Louisiana	12 Homer, Louisiana	13 Sarepta-Carterville, Louisiana	14 El Dorado, Arkansas	15 Haynesville, Louisiana	16 Miller County, Arkansas	17 Cotton Valley, Louisiana
Below 20	....	....	....	....	....	....	....	$.82	$.82	....	..	....	....	....	....	....	....
20-20.9	....	....	....	....	....	....	....	.84	.84	....	..	....	....	....	....	....	....
21-21.9	....	....	....	....	....	....	....	.86	.86	....	..	....	....	....	....	....	....
22-22.9	....	....	....	....	....	....	....	.88	.88	....	..	....	....	....	....	....	....
23-23.9	....	....	....	....	....	....	....	.90	.90	....	..	....	....	....	....	....	....
24-24.9	....	....	....	....	....	....	....	.92	.92	....	....	....	....	....	....	....	....
Below 25	*$.76	....	....	....	....	....	....	....	....	$.63	$.69	$.71	$.75	$.75	$.65	$.62	$.76
25-25.9	*.78	....	....	....	....	....	....	.94	.94	.65	.71	.73	.77	.77	.67	.64	.72
26-26.9	*.80	....	....	....	....	....	....	.96	.96	.67	.73	.75	.79	.79	.69	.66	.74
27-27.9	*.82	....	....	....	....	....	....	.98	.98	.69	.75	.77	.81	.81	.71	.68	.76
28-28.9	*.84	....	....	....	....	....	....	1.00	1.00	.71	.77	.79	.83	.83	.73	.70	.78
Below 29	.84	$.79	$.79	....	....	....	$.84	....	....	....	....	....	....	....	....	....	....
29-29.9	.86	.81	.81	....	....	....	.86	1.02	1.02	.73	.79	.81	.85	.85	.75	.72	.80
30-30.9	.88	.83	.83	....	....	....	.88	1.04	1.04	.75	.81	.83	.87	.87	.77	.74	.82
31-31.9	.90	.85	.85	....	....	....	.90	1.06	1.05	.77	.83	.85	.89	.89	.79	.76	.84
32-32.9	.92	.87	.87	....	....	....	.92	1.08	1.06	.79	.85	.87	.91	.91	.81	.78	.86
33-33.9	.94	.89	.89	....	....	....	.94	1.10	1.07	.81	.87	.89	.93	.93	.83	.80	.88
34-34.9	.96	.91	.91	....	....	....	.96	1.12	1.08	.83	.89	.91	.95	.95	.85	.82	.90
Below 35	....	....	....	$.79	$.69	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	.98	.93	.93	.81	.71	$1.09	.98	1.12	1.09	.85	.91	.93	.97	.97	.87	.84	.92
36-36.9	1.00	.95	.95	.83	.73	1.11	1.00	1.12	1.10	.87	.93	.95	.99	.99	.89	.86	.94
37-37.9	1.02	.97	.97	.85	.75	1.13	1.02	1.12	1.11	.89	.95	.97	1.01	1.01	.91	.88	.96
38-38.9	1.04	.99	.99	.87	.77	1.15	1.04	1.12	1.12	.91	.97	.99	1.03	1.03	.93	.90	.98
39-39.9	1.06	1.01	1.01	.89	.79	1.17	1.06	1.12	1.13	.93	.99	1.01	1.05	1.05	.95	.92	1.00
40 and over	1.08	1.03	1.03	.91	.81	1.19	1.08	1.12	1.14	.95	1.01	1.03	1.07	1.07	.97	.94	1.02

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedules: Below 25 degrees, 76 cents; 25-25.9 degrees, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08: Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co. and Wilcox Oil & Gas Co. All others begin their schedule at below 29 degrees, 84 cents, excepting Phillex Oil Co. which begins with below 31 degrees at 88 cents.

Column 1—Effective September 29, The Texas Co. in Oklahoma, Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp. in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co. in Kansas and Oklahoma; The Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Phillex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; on October 1 by Barnsdall Refineries, Inc., in Oklahoma.

Column 2—Effective September 29, by the Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective September 29 in the Van Pool, Van Zandt County, the Pure Oil Co. posted below 29 degrees, 84 cents, with 2 cents added for each degree up to 40 and over at $1.08.

Column 3—Effective September 29 by the Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective September 29, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 25 degrees, 63 cents, with 2 cents added for each degree up to 40 and over at 95 cents. For Standard Oil Co. of Louisiana's prices see Columns 10 to 16, inclusive.

Column 4—Effective September 29 by the Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co. and H. F. Wilcox Oil & Gas Co. On same day Phillex Oil Co. posted below 31 degrees, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents.

Column 5—Effective September 29 by the Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Phillex Oil Co. posted below 31 degrees, 61 cents, with 2 cents added for each degree upward to 40 and over at 81 cents.

Column 6—Effective September 29 by the Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30 by the Texas Co which on September 29 had posted a schedule of $1.07 to $1.12, with a 1-cent spread on each degree.

Column 7—Effective September 29 by the Stanolind Oil & Gas Co.

Column 8—Effective September 29 by the Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana: 20-20.9 degrees, 84 cents, with 2 cents added for each degree upward to 34 and over at $1.12, and in Cameron Meadows and Iowa, Louisiana: Below 20 degrees, 72 cents, with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 20 degrees, 70 cents, with 2 cents added for each degree upward to 34 degrees and over at $1.00; and in Black Bayou and White Castle, Louisiana: Below 20 degrees, 80 cents, with 2 cents added for each degree upward to 34 degrees and over at $1.10.

Column 9—Effective September 30, the Texas Co. (On September 29, the Texas Co. had posted a schedule 2 cents lower on each degree, but changed it on September 30.)

Columns 10, 11, 12, 13, 14, 15, 16—Effective September 29, by the Standard Oil Co. of Louisiana and Louisiana Oil Refining Co.

Column 17—Effective September 29, by the Louisiana Oil Refining Co.

(California Crude Oil Prices on Page 30)

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas	$1.00
Stratman, Kans. (Sept. 29, 1933)	1.08
Corsicana (heavy) (June 17, 1933)*	.30
Other fields	(See gravity table)

Note—In East Texas, effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co. and Empire Oil & Refining Co.

*Magnolia Petroleum Co. †Eldorado Refining Co.

West Texas

Crane, Upton, Crockett, Howard, Glasscock, Mitchell (Sept. 29, 1933)	$.76
Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933)	.70
Pecos County, Yates shallow pool (Sept. 29, 1933)*	.65
Jones and Fisher Counties	See gravity table

Note—Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.

*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specifications discontinued by leading buyers	(See gravity table)
Tomball (see note)*	$1.15
Livingston (Sept. 29, 1933)†	1.00
Greta (Sept. 29, 1933)	.85
Refugio, light	(See gravity table)
Refugio, heavy (Sept. 29, 1933)‡	.85
Markham and High Island	(See Gulf Coast gravity table)
Conroe	(See Conroe gravity table)

Note—Tomball, effective September 29, by Humble Oil & Refining Co., and October 2 by Magnolia Petroleum Co. and November 10 by Stanolind Oil & Gas Co.

*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy, by Humble Oil & Refining Co.

South Central and Southwest Texas

(See note below table)

Darst Creek	$.87
Mirando	.80
Luling (Sept. 29, 1933)	.75
Pettus	1.05
Salt Flat	.87
Lytton Springs (Sept. 29, 1933)	.95
Duval County (Sept. 29, 1933)	.80
Saxet	.85

Note—Effective on September 29 by Humble Oil & Refining Co. in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29, by Humble Oil & Refining Co. and Texas Co. Effective September 29 in Salt Flat by Shell Petroleum Corp.

(Continued on Page 30)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

November 21, 1933

Taxes

The gasoline quotations given in the following tables include the 1½-cent Federal tax effective June 17, 1933, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third or competitive grade is available at 1 or more cents per gallon under the service station price for the regular grade. Ethyl Gasolines are sold 3 cents above the service station price for the regular grade.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atlanta, Ga.	21.5	21.5	7.5	14.0
Augusta	21.5	21.5	7.5	14.0
Macon	22.0	22.0	7.5	14.0
Savannah	22.0	22.0	7.5	14.0
Birm'ham, Ala.	24.0	24.0	8.5	13.5
Mobile	23.0	23.0	8.5	12.5
Montgomery	25.0	25.0	8.5	14.5
Jackson, Miss.	22.0	22.0	7.5	13.0
Vicksburg	21.5	21.5	7.5	13.0
Jack'ville, Fla.	23.0	23.0	8.5	13.5
Miami	23.0	23.0	8.5	13.5
Pensacola	20.0	20.0	8.5	13.5
Tampa	23.0	23.0	8.5	13.5
Lexington, Ky.	20.5	20.5	6.5	11.0
Covington	20.0	20.0	6.5	11.0
Louisville	20.0	20.0	6.5	11.0
Paducah	19.5	19.5	6.5	11.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and 1 one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1-cent state tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1-cent city tax.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Dallas, Tex.	16.5	19.5	5.5	8.5
Fort Worth	16.5	19.5	5.5	8.5
Houston	16.5	18.5	5.5	8.5
San Antonio	16.5	19.5	5.5	8.5
El Paso	17.0	20.0	5.5	8.5
Texarkana	*19.5	19.5	5.5	8.5
Muskogee	16.0	18.5	5.5	8.5
Okla. City	16.0	18.5	5.5	8.5
Tulsa	16.0	18.5	5.5	8.5
Ft. Smith, Ark.	*17.9	17.9	5.5	9.0
Little Rock	*20.4	20.4	7.5	9.0

*Less 3 cents to dealers.

Standard Oil Co. (Indiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Chicago	17.8	17.8	4.5	9.7
Decatur, Ill.	18.2	18.2	4.5	10.2
E. St. Louis	17.5	16.7	4.5	9.5
Joliet	18.2	18.2	4.5	10.2
Peoria	18.2	18.2	4.5	10.2
Quincy	18.0	18.0	4.5	10.0
Davenport, Ia.	18.1	18.1	4.5	10.1
Des Moines	18.1	18.1	4.5	8.0
Mason City	18.1	18.1	4.5	10.1
Sioux City	17.7	17.7	4.5	9.7
Duluth, Minn.	18.7	18.7	4.5	10.4
Mankato	18.3	18.3	4.5	10.3
Minneapolis	18.4	18.4	4.5	10.4
LaCrosse, Wis.	19.8	19.8	5.3	10.8
Green Bay	19.2	19.2	5.5	10.2
Milwaukee	18.7	18.7	5.5	9.7
Madison	18.9	18.9	5.5	9.9
Detroit, Mich.	18.0	18.0	4.5	10.5
Grand Rapids	18.2	18.2	4.5	10.2
Saginaw	18.5	18.5	4.5	10.5
Evansville, Ind.	17.5	17.5	5.5	10.0
Indianapolis	19.2	19.2	5.5	10.2
South Bend	19.5	19.5	5.5	10.5
Fargo, N. Dak.	20.1	20.1	4.5	12.1
Huron, S. Dak.	20.4	20.4	5.5	11.4
Sioux Falls	19.9	19.9	5.5	10.9
K. C., Mo.*	17.2	17.2	4.5	7.5
Springfield*	17.1	17.1	4.5	8.2
St. Louis	16.2	16.2	4.0	8.7
St. Joseph*	16.8	16.8	4.5	8.3
Wichita, Kans.	16.1	16.1	4.5	8.1
Bartlesville, Ok.	16.5	19.0	5.5	8.5

*State tax 3 cents, 1-cent city tax and 1½-cent Federal tax.

Effective June 1, 1933—Discounts off tank wagon price to consumers on 500 gallons or more per month in territory outside of Chicago metropolitan area: 3 cents on Ethyl and Red Crown gasolines, and 1 cent on Stanolind gasoline. One-half cent additional discount in Chicago division.

Effective July 1, 1933—Discounts on resellers authorized agent's agreement made off the service station price throughout the territory as follows: 2.5 cents on Red Crown Ethyl and Standard Red Crown gasolines and 1.5 cents on Stanolind gasoline. Half of reduction from normal service station price shall be absorbed by resellers up to maximum of 1 cent on all grades.

Stanolex Furnace Oil in Chicago

Effective September 13, 1933, prices f.o.b. Chicago, tank wagon prices: No. 1 (36-40 lt. stw. zero), under 100 gallons, 8¼ cents; No. 2 (30-34 stw zero), 7¾ cents; No. 3 (32-26 zero), 7¼ cents; No. 4 under 300 gallons (12-16 zero), 6¼ cents; viscosity of No. 4, 90-115 at 100° F.; No. 5 under 300 gallons, 6 cents; for deliveries of 100 gallons or more deduct 1 cent.

Naphtha

	Tank wagon
Oleum spirits	13.9
V.M.&P. naphtha	15.9
Cleaners' naphtha	15.0
Stanisol	15.0

Prices f.o.b. Chicago, September 13, 1933. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atl'tic City, N.J.	19.3	18.7	4.5	10.0
Newark	18.5	18.0	4.5	9.5
Annapolis, Md.	19.8	19.3	5.5	10.0
Baltimore	19.3	18.8	5.5	9.0
Cumberland	20.8	20.3	5.5	12.7
Wash'g'n, D. C.	17.5	15.0	3.5	11.0
Danville, Va.	21.9	21.4	6.5	12.9
Norfolk	20.4	18.8	6.5	11.3
Petersburg	21.2	20.7	6.5	11.4
Richmond	20.8	20.3	6.5	11.7
Roanoke	22.0	21.5	6.5	12.9
Charls'n, W.Va.	20.2	19.7	5.5	12.6
Parkersburg	19.5	19.0	5.5	11.2
Wheeling	20.2	19.0	5.5	12.2
Charlotte, N. C.	23.6	22.0	7.5	13.5
Hickory	23.9	23.4	7.5	13.7
Mt. Airy	23.9	23.4	7.5	13.8
Raleigh	23.4	23.9	7.5	13.3
Salisbury	23.7	23.2	7.5	13.6
Charleston, S.C.	21.4	20.9	7.5	11.3
Columbia	23.2	22.7	7.5	13.2
Spartanburg	23.6	23.1	7.5	13.5

Note—Dealer contracts for gasoline are written at 2½ cents over the posted tank car price. Kerosene 1 cent off tank wagon for 25 gallons or more under contract except New Jersey and Baltimore, Md.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
N. Orleans, La.	20.3	18.9	*7.5	†12.0
Baton Rouge	20.0	19.5	6.5	†12.0
Alexandria	20.9	20.4	*7.5	†12.0
Lafayette	21.1	20.6	*7.5	†12.0
Lake Charles	21.0	20.5	*7.5	†12.0
Shreveport	18.8	18.3	6.5	†12.0
Knoxville, Tenn.	24.2	23.2	8.5	13.5
Memphis	22.6	21.5	8.5	11.0
Chattanooga	22.9	22.9	8.5	12.0
Nashville	23.5	21.5	8.5	11.0
Bristol	24.1	22.5	8.5	14.0

*Includes city tax of 1 cent. †Louisiana kerosene prices include 1-cent state tax.

Effective June 2, 1933, station prices fixed at 7 cents above basic tank car price at key refining points in territory. Commercial consumers for tank wagon delivery pay following amounts over tank car price basis yearly deliveries:

1,000 to 75,000 gallons	2.5
75,000 to 300,000 gallons	1.5
Over 300,000 gallons	1.0

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA*

	Gasoline			Kero.
	Tank truck†	Posted retail	Incl'ds tax	tank wagon
San Francisco	16.0	18.0	4.5	12.5
Los Angeles	10.5	13.5	4.5	12.5
Fresno, Calif.	13.5	16.5	4.5	14.0
Phoenix, Ariz.	18.5	21.5	6.5	‡16.0
Reno, Nev.	18.5	21.5	5.5	15.5
Portland, Ore.	19.0	22.0	5.5	13.5
Seattle, Wash.	19.0	22.0	6.5	13.5
Tacoma	19.0	22.0	6.5	13.5
Spokane	21.5	24.5	6.5	18.0

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent. ‡Includes 5-cent state tax.

New York and Part of New England District

STANDARD OIL CO. OF NEW YORK

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Albany, N. Y.	17.1	18.1	4.5	9.5
New York	17.0	18.0	4.5	8.5
Buffalo	17.7	18.7	4.5	9.5
Rochester	17.5	18.5	4.5	9.5
Syracuse	17.6	18.6	4.5	9.0
Boston, Mass.	17.0	18.0	4.5	8.0
Augusta, Me.	18.5	19.5	5.5	9.0
Manch'tr, N. H.	19.2	20.2	5.5	8.5
Burlington, Vt.	19.8	20.8	5.5	9.0

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Philadelphia, Pa.	14.5	15.0	4.5	10.0
Pittsburgh	17.0	18.0	4.5	10.0
Allentown	17.0	18.0	4.5	10.0
Erie	17.0	18.0	4.5	10.0
Scranton	17.0	18.0	4.5	10.0
Altoona	17.0	18.0	4.5	10.0
Dover, Del.	17.0	18.0	4.5	10.0
Wilmington	16.5	16.5	4.5	10.0
Boston, Mass.	17.0	18.0	4.5	8.5
Springfield	17.6	18.6	4.5	8.5
Worcester	17.5	18.5	4.5	8.5
Hartford, Conn.	16.4	17.4	3.5	8.5
New Haven	16.2	17.2	3.5	8.5
Providence, R.I.	16.0	17.0	3.5	8.5

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Denver, Colo.	19.0	21.5	5.5	12.5
Pueblo	19.0	21.5	5.5	13.0
Grand Juctn.	21.0	23.5	5.5	15.0
Casper, Wyo.	19.5	22.0	5.5	11.0
Cheyenne	18.0	20.5	5.5	13.0
Butte, Mont.	21.0	23.5	5.6	17.5
Billings	23.0	25.5	6.5	16.5
Helena	23.0	25.5	6.5	17.5
Great Falls	23.5	25.0	6.5	17.5
Salt Lake, Utah	22.0	24.5	5.5	16.0
Boise, Idaho	23.0	25.5	6.5	18.0
Twin Falls	23.0	25.5	6.5	18.0
Albu'que, N. M.	19.5	22.5	*7.5	13.0

*One-cent city tax.

Effective June 1, 1933, dealers and lease and license accounts will receive 2½ cents discount on regular gasoline in Montana, Colorado, Wyoming, Utah and Idaho.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Ohio points	17.0	18.0	5.5	*12.5

*Includes state tax of 1 cent, effective July 22.

Canada*

IMPERIAL OIL, LTD.
Imperial 3-Star Gasoline

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Hamilton, Ont.†	26.5	27.5	6.0	17.5
Toronto, Ont.†	26.5	27.5	6.0	17.5
Brandon, Man.*	31.0	34.5	7.0	22.5
Winnipeg, Man.	28.0	31.5	7.0	19.5
Regina, Sask.	31.0	35.0	6.0	23.5
Saskatoon, Sask.	33.0	37.0	6.0	25.5
Edmonton, Alta.	31.5	35.5	6.0	24.5
Calgary, Alta.	28.0	32.0	6.0	21.0
Vanc'ver, B. C.†	30.0	31.0	7.0	24.0
Montreal, Que.	24.0	27.0	6.0	17.0
St. Johns, N. B.	26.5	30.5	7.0	21.0
Halifax, N. S.	25.5	29.5	6.0	21.0

*Imperial gallon used in Canada. †Dealer discount posted tank wagon on gasoline in Ontario and British Columbia subject to dealer's discount of 3 cents per gallon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Omaha	18.8	19.8	5.5	10.8
McCook	19.0	19.0	5.5	9.0
Norfolk	19.3	20.3	6.5	11.3
N. Platte	20.3	21.3	5.5	10.5
Scottsbluff	19.8	19.8	5.5	11.0

Note: Discount to dealers and AAA commissions. From service station price: Red Crown Ethyl and Standard Red Crown gasoline, 3 cents. Reliance (third grade) gasoline, 2 cents. Rentals under lease and agents agreement, one-half cent per gallon additional.

Discount to consumers under contracts (large consumers under contracts and governmental units): On tank wagon deliveries of gasoline on monthly purchases of 500 gallons, or yearly purchases of 6,000 gallons, from the service station price: Red Crown Ethyl and Standard Red Crown Gasoline, 2 cents per gallon; Reliance (third brand) gasoline, 1 cent per gallon.

Retail Price Changes

Regular-Grade Gasoline and Kerosene

Standard Oil Co. of California November 15 reduced the tank wagon price of gasoline 2 cents and the service station price 1 cent in Los Angeles. On the same date it reduced tank wagon and service station prices 1 cent in Fresno. November 17 it reduced tank wagon and service station prices 1 cent in Portland, Seattle, Tacoma and Spokane.

Standard Oil Co. of Louisiana November 3 reduced the service station price of gasoline 1 cent in Nashville and .6 cent in Memphis.

Standard Oil Co. of New Jersey November 7 reduced the service station price of gasoline one-half cent in Roanoke and November 11 advanced it 2 cents. November 7 it reduced the service station price of gasoline one-half cent in Norfolk and November 14 reduced it an additional .2 cent. November 16 the company reduced the service station price of gasoline 2 cents in Washington, D. C.

Standard Oil Co. of Kentucky November 6 advanced the tank wagon and service station prices of gasoline 1 cent in Vicksburg and November 10 advanced the prices 1 cent in Louisville.

Standard Oil Co. of New York November 17 restored normal gasoline tank wagon and service station prices in Rochester. The prices established on that date were 17.5 cents tank wagon and 18.5 cents service station including 4.5 cents Federal and state taxes. These same prices were in effect October 31. On November 1 the company reduced gasoline tank wagon and service station prices 2 cents in Rochester and on November 4 an additional 1 cent.

CALIFORNIA OIL AND GAS

LOS ANGELES, Calif., Nov. 18.—At a meeting of the board of directors of the California Oil and Gas Association on November 16 the nominating committee presented its report for officers and directors of the association for the calendar year 1934. The actual election will occur on December 20. The individuals named are as follows: President, C. S. Jones, vice president, Rio Grande Oil Co.; vice president, Ralph B. Lloyd, president, Lloyd Corp.; vice president, L. P. St. Clair, president, Union Oil Co. of California; treasurer, H. L. Westbrook, vice president, Belridge Oil Co.

Nomination for directors were: R. A. Broomfield, president, Barnsdall Oil Co. of California; J. A. Brown, president, General Petroleum Corp. of California; J. A. Crawford, president, Republic Supply Co. of California; D. S. Faulkner, vice president, National Supply Co. of California; E. B. Gilmore, president, Gilmore Oil Co.; William F. Humphrey, president, Associated Oil Co.; K. R. Kingsbury, president, Standard Oil Co. of California; G. Legh-Jones, president, Shell Oil Co.; W. C. McDuffie, receiver, Richfield Oil Co. of California; A. B. Macbeth, president, Southern California Gas Co.; A. C. Mattei, vice president, Honolulu Oil Corp., Ltd.; S. B. Mosher, president, Signal Oil & Gas Co.; C. E. Olmstead, vice president, Texas Co.; W. B. Pyron, vice president, Western Gulf Oil Co.; William Reinhardt, manager, Kettleman North Dome Association; F. C. Ripley, manager, Chanslor-Canfield Midway Oil Co.; H. B. Simcox, manager, California division, Continental Oil Co.

NEWS FOR PETROLEUM REFINERS

David V. Stroop Appointed A.P.I. Marketing Secretary

David V. Stroop, for several years an engineer on the staff of the American Petroleum Institute, last week was appointed secretary of the Division of Marketing by W. R. Boyd, Jr., executive vice president. He succeeds Paul Hadlick.

—Underwood & Underwood Studios.
DAVID V. STROOP

now of the National Oil Marketers Association, who resigned several months ago.

Around the headquarters of the Institute and among his friends in the industry Dave Stroop is known as a "hard worker." Since joining the Institute in 1928 he has served as secretary of a large number of committees engaged in special work requiring exhaustive technical investigations. His work in furthering the organization's program in the field of fire prevention and safety, corrosion, prevention of pollution and in rail and motor transportation, has been outstanding.

Previous to joining the Institute staff, Mr. Stroop for four years was an associate engineer with the U. S. Bureau of Mines at Washington, D. C. In addition to new work as secretary of the Marketing Division, he will carry on regular duties as engineer.

NEW CANADIAN REFINERY

WEYBURN, Saskatchewan, Nov. 18. Excel Refineries, Ltd., is constructing a new refining plant at Weyburn, Saskatchewan. Construction is reported well under way, and the plant is expected to be completed and in operation by December 1. It will have a crude capacity of 500 bbls. a day, crude being imported from the United States. The plant is financed by Weyburn capital, Ed. Wiesland, formerly of Estevan, Saskatchewan, being president and general manager. The plant was designed by Don J. Baize of Billings, Mont., who is also in charge of construction. Mr. Baize has built several refineries in Canada and recently completed construction of the Big Horn refinery at Billings.

REFINERY NEARS COMPLETION

BIG SPRING, Tex., Nov. 18.—Construction of new stills at the Cosden Oil Co. refinery here has been giving 100 to 250 men employment for several months. The work is nearing completion.

ADD CRACKING PLANT

The Southport Refining Co. which operates a 1,500-bbl. skimming plant at Kilgore, in the East Texas Field, has let contracts for the erection of a 1,500-bbl. cracking unit. Work is to start at once. The contract was let to the Mid-Continent Engineering Co.

The new unit is designed to crack 1,500 bbls. of reduced crude daily. Stocks of residuum have been accumulated over a long period.

Eastern States to Perfect Plans for Collecting Tax

NEW YORK, Nov. 18.—Representatives of tax commissions in nine eastern states will meet here November 27 to discuss ways and means of combating the gasoline tax evasion evil. The meeting which was called by Mark Graves, president of the New York Tax Commission, will be attended by representatives from Connecticut, Delaware, Maryland, Massachusetts, New Jersey, Pennsylvania, Rhode Island and Vermont.

"A closer co-ordination of tax collection efforts between states would materially reduce gasoline tax evasion," Mr. Graves said in calling the meeting. "One main difficulty in collecting gasoline taxes is due to the interstate character of the business. The state's taxing processes cannot apply on any gasoline until it shall have left interstate commerce and comes to rest within the state."

Investigations made in this section recently have shown that evasion of taxes is being accomplished by several methods. The investigation also has shown that the substitution evil is on the increase. This substitution practice usually is tied with evasion of tax in the case of gasoline. A gasoline on which no tax has been paid is substituted for the branded product of a widely known distributor, the substitution taking place at the station. The plan is to secure greater co-operation between the states and set up a policing system which will check the movement of gasoline from one state to another.

CHEMICAL SOCIETY MEETING

The twelfth Mid-West regional meeting of the American Chemical Society will be held in Kansas City, May 3, 4 and 5, 1934, according to an announcement made by H. M. Steininger, secretary. Doctor Sullivan, of the Standard Oil Co. (Indiana) and chairman of the Petroleum Division of the society, has appointed H. T. Bennett of the Mid-Continent Petroleum Corp. and H. H. Smith of the Bureau of Mines at Bartlesville, Okla., to aid in preparing for a strong program of papers of interest to petroleum technologists. Dr. Roy Cross of Kansas City, well known in the refining fraternity, is chairman of the local committee.

MAY IGNORE STRIKE

ST. LOUIS, Mo., Nov. 20.—Eight major oil companies, whose stations in St. Louis and St. Louis County have been closed as a result of a strike by attendants, today rejected mediation by regional labor board and called the strike "precipitious and unwarranted."

Although no formal announcement was made, it was generally believed that the companies might attempt to resume service shortly in disregard of the strike.

The strike began Saturday after oil companies declined to recognize the union and to inaugurate a salary scale ranging from $65 a month for porters to $135 for station managers.

Crescent Crude Yields High Per Cent Gasoline

A laboratory test showing the quality of the crude being produced in the new Crescent Pool in Logan County, Oklahoma, has been supplied by the Eason Oil Co. showing the following results. The crude was taken from the Gypsy Oil Co. and Carter Oil Co.'s No. 1 Miller, C NE SE Section 28-17-4w. Gravity of crude is 41.8.

DISTILLATION RESULTS

Per cent I.P.	Temp. 99°F.	Frac. grav.	Comb. grav.
5	198	77.4	....
10	235	68.7	73.0
15	262	63.3	69.5
20	285	59.0	66.9
25	312	56.5	64.8
30	343	53.0	62.8
35	386	50.3	61.0
37.6	410	48.2	59.1
40	436	....	....
45	462	45.0	44.2
50	504	41.2	42.9
52.5	520	....	42.2
55	540	38.7	38.7

LABORATORY YIELDS

	Per cent	Gravity
Gasoline	37.6	59.1
Kerosene	14.9	42.2
Stove distillate	2.5	38.7
Topped crude	44.2	28.8
Loss	8	....
Total	100.0	

At the present time there are five wells producing and five drilling.

OKLAHOMA A.C.S. MEETING

The petroleum group, Oklahoma section, American Chemical Society, will meet in Tulsa on November 25. Afternoon and evening sessions are scheduled. W. T. Levitt, of the Corning Glass Co., manufacturer of "Pyrex," will address the afternoon session on "Glass-Blowing, Past and Present." Mr. Levitt will demonstrate some of the intricacies of glass-blowing during his lecture.

Following dinner at 6 p.m., in the Chamber of Commerce dining room, the group will be entertained by a wrestling exhibition by the Tulsa High School wrestling team.

Two papers will be presented at the evening session. Estel H. Counts, Arkansas City, Kans., will speak on "Transfer Coefficients for Hydrocarbon Condensing Films." Mr. Counts received a prize of a one-year membership in the American Chemical Society when this paper was awarded first place in a statewide student contest sponsored by the petroleum group.

Howard Beckley, research chemist in the laboratories of the Mid-Continent Petroleum Corp., will speak on "Solvents in the Manufacture of Lubricating Oils."

The meetings are open to all who are interested.

NEW BELGIAN REFINERY

ANTWERP, Belgium, Nov. 18.—Considerable interest has been aroused in shipping circles during the past few weeks, by the rapid progress of the new oil refining installation which is being erected on the south side of the new dock at Antwerp, known as the "Quatrieme Darse." The work of erecting tanks has been carried out at high pressure, and already three of these tanks are ready to receive their first cargo of crude oil. At present, eight tanks are either building or completed; six of these are of 2,200 cubic meters, while the two larger tanks have a capacity of 7,200 meters. The installation is owned by the British Lianosoff White Oil Co., and will be used for the extraction and production of asphalt from crude oil brought to Antwerp from Mexico and other countries.

REFINERY IS PLANNED

CALGARY, Alberta, Nov. 18.—Economy Oils, Ltd., recently organized with E. S. Bowden as president, has purchased the holdings and property of Economy Oil Co. and is planning construction of an oil refinery at Calgary and establishment of service stations throughout Alberta. The purchase price of the company was reported at $100,000.

Higher Wages for Skilled Workmen in Near Future

A substantial increase in the wages paid to skilled labor in the oil industry was provided for in a recommendation of the industry's Planning and Co-ordination Committee, November 16, approved by the Secretary of the Interior, Harold L. Ickes.

The original NRA oil code did not fix the wages for skilled labor, but in the modifications of the code, approved on September 13, it was stipulated that there should be equitable differentials set up between skilled and unskilled workers' pay rates.

These differentials now are being considered by the Planning and Co-ordination Committee representing the industry, with a view to submitting them to the Labor Policy Board, to be appointed shortly by Secretary Ickes.

The committee recommended that when the differentials are finally established, the wage increases found necessary shall be retroactive to September 2, the date on which the oil code became effective.

AMERICAN OIL TO EXPAND

NEW YORK, Nov. 17.—The American Oil Co., subsidiary of the Pan American Petroleum & Transport Co. (Standard Oil Co. of Indiana), is making preparations to greatly expand its operations in a marketing territory which includes practically the entire area east of the Mississippi River except those states in which the Standard of Indiana is now operating.

The recent merger of the Lord Baltimore Filling Stations, Inc., with the American company has expanded the latter company's operations into New England and several Atlantic Seaboard states. Under the merger plans all stations will be operated under the American name, including the American's branded products. The company now has 12 ocean terminals and several hundred bulk and filling stations.

Steady expansion of marketing facilities will be necessary to take care of the output of the new Pan American refinery under construction at Texas City. This plant, which will have an initial capacity of 25,000 bbls. daily, will start operating next spring.

DOCKETS LOUISIANA TAX CASE

The Supreme Court has docketed for hearing Case No. 546, American Airways, Inc., vs. Grosjean, Supervisor, etc.

The American Airways, Inc., an interstate air carrier purchased gasoline outside of the State, imported it to supply depots at air fields within the State, used it to fill airplane tanks and consumed it in airplanes in interstate commerce. The Airways contend that the application of Louisiana's excise tax on the use, consumption, or sale of gasoline to its use of gasoline violates the Constitution in imposing a burden on interstate commerce, and the Fourteenth Amendment on the ground that it imposes a tax for use of highways which the carrier did not use.

Gasoline Market Spotty in Chicago, But Better Tone Shown in Heating Oils

By SPECIAL CORRESPONDENT

CHICAGO, Nov. 20.—While gasoline has been easy and spotty, a better tone has been coming into the heating oils, to make the general refinery market structure a mixed one as the week opened. Jobbers remain virtually out of the market so far as important spot purchases are concerned, awaiting developments.

Opinion here is that improvement in the gasoline market is a distinct likelihood, but hope for such a development has existed for weeks without realization. Sufficient gasoline is coming into market centers to keep the general outlook uncertain. Few refiners have large quantities to sell, and few of them are willing to sell far in advance, but at the moment the market is uncertain. Marked improvement in price, it is felt, would be the inducement for jobbers to come into purchases on a large scale, fearing to be left behind.

The trade is watching price control developments in Washington and is looking for interesting happenings. It has come to be a foregone conclusion in the trade here that time must elapse before final settlement of the entire minimum price question. Meanwhile, general oil code developments continue to occupy an important place in trade interest, with many complaints of violations, although in general it appears that marketing conditions throughout the central states region are better than those of several months ago.

Some slight easing reported in natural gasoline as the week closed was offset by an even keener interest than recently in high gravity volatile gasoline, both antiknock and those without antiknock specifications. Good octane gasolines are holding their own in price well, while third-grade gasoline is the product in which most of the irregularity exists. Reports in well-informed quarters here are that additional major company buying is possible in the next few days. As it is, low octane motor gasoline is ruling close to 4 cents, and in numerous instances small lots are freely available below that figure.

Reduced output of gasoline in the refining district ordinarily serving this market is hailed as a favorable sign, but as to actual market effect it is about offset by the fact consumption has been reduced. This situation is not precisely a disappointment, since it is seasonal, but low temperatures have come early this year. Many here consider that further curtailment of both crude oil production and refinery operating rates will be necessary before long. It is generally felt that the processes of effective oil market stabilization are at work and are bound to prove effective, although it may require much time to bring about the full results desired.

Numerous jobber contracts are being signed for the coming year. A margin of 5½ cents is being stipulated widely, with other features much like those in past years, except that most contracts carry provisions recognizing governmental regulation. Jobbers are reporting varied results of autumn and early winter sales campaigns, although many of them are encouraged by the conditions they encounter.

Kerosene has been quiet and easy, with prices ruling a shade lower. Best distillates are now near a parity with kerosene, with more kerosene in storage than a year ago, and with rural demand down to a low point.

Distillates and the better grades of gas oils are in good call. Various factors have influenced demand, and actual consumption for November has been comparatively heavy. The number of oil burners in use appears surprisingly large. Distributors are keeping tanks full, guarding against unexpected cold spells.

Due to the somewhat uncertain and unsettled state of the general business outlook, demand for industrial fuel oil is not all that it might be. Still, stiff crude markets are aiding in maintaining prices. Industrial gas oil is holding its own, except for extremely high cold test materials. All zero fuels are scarce in the open market and readily sold where they are found.

Stabilization is continuing in naphthas and solvents. The price structure has been holding up well along recently established lines. Volume of material moving is considered fairly good in such items and cleaners' naphtha and the solvents. Paint trade items are subject to fair inquiry.

Industrial lubricating oil business remains slow. The eastern oil price structure appears strong, with the Southwest situation hardly so strong, but holding. The possibility of an advance in retail motor oil prices it still talked of.

With wax stocks still declining, bids are becoming more frequent from buyers, and at the same time sellers are not anxious to sell. Prices here are unchanged, but it would not be surprising to see another advance soon.

Crude Oil Prices

(Continued from Page 27)

Rocky Mountain States

Iles, light (Sept. 29, 1933) ..... $.96
Iles, heavy (Sept. 29, 1933) ..... .90
Florence, Colo. (June 17, 1933) ..... .30
Fort Collins and Wellington, Colo. (June 17).....(See Salt Creek prices)
Big Muddy (Sept. 29, 1933) 1.01
Frannie, light (Sept. 29, 1933) ..... .87
Frannie, heavy (Sept. 29, 1933) ..... .62
Salt Creek and La Barge (Sept. 9, 1933)
See Stanolind Mid-Continent price schedule
Grass Creek, light (Sept. 29, 1933) 1.18
Grass Creek, heavy (Dec. 15, 1932)..... .45
Elk Basin (Sept. 29, 1933) 1.18
Rock Creek (Sept. 29, 1933) 1.02
Dutton Creek (July 8, 1933).....
.....See Mid-Continent gravity prices
Lance Creek (Dec. 16, 1932)..... .92
Poison Spider (Mar. 5, 1931)..... .70
Hudson (June 2, 1931)..... .65
Lander (Mar. 5, 1931)..... .40
Rex Lake (Feb. 22, 1930).. ..... 1.10
Osage (Jan. 18, 1933)..... .53
Lost Soldier (Sept. 30, 1933) ..... .85
Hamilton Dome (Dec. 16, 1932) ..... .35
Torchlight (Sept. 29, 1933) 1.18
Greybull (Sept. 29, 1933) 1.18
Pondera 1.15
Sunburst (Sept. 29, 1933) 1.35
Cat Creek, Montana 1.07
Hogback (Sept. 29, 1933) 1.11
Lea County, N. Mex. (Sept. 29, 1933) .. .75
Maljamar (Sept. 29, 1933) ..... .70
Artesia-Jackson (Sept. 29, 1933) ..... .70

Note—Salt Creek, Torchlight, Elk Basin Grass Creek, Frannie, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, by Humble Oil & Refining Co and other buyers; Fort Collins, Wellington Orchard, Florence, Big Muddy, Cat Creek Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro.
*Continental Oil Co.

North Louisiana and Arkansas

Smackover, Ark (all grades) ..... $.70
Urania, La. (Oct. 3, 1933) ..... .75
Nevada, Ark. (Sept. 29, 1933) ..... .60
East El Dorado (Sept. 29, 1933) ..... .70
Other fields.....(See gravity table)

Note—Smackover: Effective September 29, 1933, Texas Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Nevada by Standard Oil Co. of Louisiana. Urania posted by H. L. Hunt Inc., and Louisiana Oil Refining Co.

Eastern States

TIDE WATER PIPE CO.
(Effective October 4, 1933)
Bradford, Pa. $2.46
Allegany, N. Y. 2.45
SOUTH PENN OIL CO.
(Effective October 4, 1933)
Pennsylvania Grade Oil in National Transit Lines (Bradford Field) $2.48
Pennsylvania Grade Oil in Southwest Pennsylvania Lines 2.13
Penna Grade Oil in Eureka Pipe Line Lines 2.07
Penna Grade Oil in Buckeye Pipe Line Lines 1.93
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Oct. 2, 1933) 1.83
PENNZOIL CO.
(Effective October 4, 1933)
Pennsylvania Grade Oil in National Transit Lines:
Group A $2.37
Includes Cochran, Franklin, Hamilton and Doolittle districts.
Group B 2.36
Includes Titusville district.
Group C 2.35
Includes Turkey and Tidioute districts.
Group D 2.34
Includes Bear Creek and Porkey districts.
Group E 2.33
Includes Edeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacy and Kinzua districts.
Price depends on length of pipe line haul to plant at Oil City.
PURE OIL CO.
(Effective October 4, 1933)
Cabin Creek, W. Va. $2.17
Bradford Hollow, W. Va. 2.17
Kelly Creek, W. Va. 2.17

Middle Western States

OHIO OIL CO.
(Effective September 29, 1933)
Lima $1.30
Illinois 1.33
Princeton, Ind. 1.23
Plymouth .....Shut in
Western Kentucky 1.18
Midland, Mich. (Sept. 30, 1933) 1.02
Oceana, Mich. (Oct. 5, 1933) ..... .90
Somerset, Ky. (Sept. 30, 1933) 1.21
Hart County, Ky. (Oct. 1, 1933) 1.18

*Posted by Pure Oil Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted price. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted price includes premium. Hart County, Kentucky, crude purchased by Stoll Refining Co. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Canada

Ontario (September 9, 1933):
Petrolia* $2.10
Oil Springs* 2.17
Turner Valley (September 11, 1933):†
Clear naphtha $3.50
Discolored naphtha 3.34
Crude oil, 50 gravity 2.93
Crude oil, 45 to 49.9 ..... 2.26
Crude oil, 40 to 44.9 ..... 1.61

*Imperial Oil, Ltd. †Imperial Oil, Ltd and Regal Oil & Refining Co.

Mexico

Panuco* ..... $.69
*F.o.b. ship, based on October transactions and exclusive of production and export taxes and bar dues.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA
(Effective September 6, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field.)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier La Habra	Montebello	Santa Fe Springs	La Habra-Coyote	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga	Coyote
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	...	$.65	$.65	$.65	$.65	...	$.65	$.57	$.57	$.57	$.65
15-15.9	.66	.66	.69	.69	.66	.69	...	.66	.66	.65	.66	...	.65	...	...	...	.65
16-16.9	.66	.66	.72	.73	.69	.73	...	.69	.67	.68	.65	...	.65	...	...	...	.65
17-17.9	.69	.66	.75	.76	.73	.76	...	.72	.70	.71	.65	...	.68	...	...	...	.68
18-18.9	.72	.66	.78	.80	.76	.79	...	.76	.74	.74	.65	...	.71	.61	.61	.59	.71
19-19.9	.76	.66	.81	.83	.80	.82	...	.78	.78	.78	.65	...	.74	.64	.65	.62	.74
20-20.9	.78	.68	.83	.87	.83	.85	...	.81	.82	.81	.66	...	.78	.67	.69	.65	.78
21-21.9	.81	.72	.86	.90	.87	.88	...	.83	.85	.84	.69	$.72	.81	.70	.73	.68	.81
22-22.9	.84	.76	.89	.94	.90	.92	...	.85	.89	.87	.72	.76	.84	.73	.76	.72	.84
23-23.9	.88	.81	.92	.97	.94	.95	$.83	.89	.93	.90	.76	.79	.87	.77	.79	.75	.87
24-24.9	.91	.85	.95	1.01	.97	.98	.86	.92	.97	.93	.80	.83	.90	.81	.82	.78	.90
25-25.9	.94	.89	.98	...	1.00	1.01	.90	.95	1.00	...	.85	.87	.93	.85	.85	.81	.93
26-26.9	.97	.93	1.01	...	1.04	1.04	.94	.98	1.04	...	.89	.90	.96	.89	.88	...	.96
27-27.9	1.00	.98	1.04	...	...	1.07	.97	...	1.08	...	...	.94	.99	.93	.91	...	.99
28-28.9	1.03	1.02	1.07	...	...	1.10	1.01	...	1.11	...	...	.98	1.02	.97	.94	...	1.02
29-29.9	1.06	1.05	1.09	...	...	...	1.04	...	1.15	...	...	1.01	1.05	1.01	.97	...	1.05
30-30.9	1.09	1.10	1.12	...	...	...	1.08	...	...	...	...	1.05	1.09	1.05	1.00	...	1.09
31-31.9	...	...	...	...	...	...	1.12	...	...	...	...	1.08	1.12	1.09	...	...	1.12
32-32.9	...	...	...	...	...	...	1.15	...	...	...	...	1.12	1.15	1.13	...	...	1.15
33-33.9	...	...	...	...	...	...	...	...	...	...	...	1.16	1.18	1.17	...	...	1.18
34-34.9	...	...	...	...	...	...	...	...	...	...	...	1.19	1.21	...	...	...	1.21
35-35.9	...	...	...	...	...	...	...	...	...	...	...	1.23	...	...	...	...	...
36-36.9	...	...	...	...	...	...	...	...	...	...	...	1.26	...	...	...	...	...
37-37.9	...	...	...	...	...	...	...	...	...	...	...	1.30	...	...	...	...	...
38-38.9	...	...	...	...	...	...	...	...	...	...	...	1.34	...	...	...	...	...

Additional Standard Oil Quotations

Elwood Terrace—F.o.b. ship, 33 degrees, $1.03; 34 degrees, $1.06; 35-35.9, $1.09; 36-36.9, $1.12; 37 degrees and over, $1.15.
Newhall—14 degrees and over, 57 cents.
McKittrick and Kern River—14 degrees and over, 57 cents.
Wheeler Ridge—14 to 17.9 degrees, 57 cents; 18-18.9, 58 cents; 19-19.9, 61 cents; 20-20.9, 64 cents; 21-21.9, 67 cents; 22-22.9, 70 cents, 23-23.9, 73 cents; 24-24.9, 76 cents; 25 degrees and over, 79 cents.
Kettleman Hills—33-33.9 degrees, 93 cents; 34-34.9, 96 cents; 35-35.9, 99 cents; 36-36.9, $1.02; 37-37.9, $1.05; 38-38.9, $1.08; 39 degrees and over $1.11.

The Texas Co. posted in Shiel Canyon, South Mountain and Santa Paula as follows: 14 to 17.9, 57 cents; 3 cents added for each degree up to and including 26-26.9 degrees at 84 cents; then 4 cents added for each degree up to and including 30 degrees and over at $1. Company posts Standard Oil Co.'s Montebello prices in Montebello and North Whittier, and posts Standard Oil Co. prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield and Santa Fe Springs, all effective September 6.

General Petroleum Co. posts Standard Oil Co. prices in Athens, Rosecrans and Signal Hill; Alamitos Heights up to 26-26.9; Santa Fe Springs up to 35-35.9; Richfield up to 25-25.9; Brea Canyon and Olinda up to 25-25.9, and Torrance up to 25-25.9.

Union Oil Co., effective September 6, posts same prices as Standard Oil Co. in all fields in which both purchase, excepting that in Athens-Rosecrans, Union Oil Co. posts 21-21.9, 72 cents, and 33-33.9, $1.18; 34-34.9, $1.21, and 35-35.9, $1.24.

Associated Oil Co., effective September 6, posted same prices for the same grades as Standard Oil Co. of California, excepting that in some fields its gravity scale stops as follows: Huntington Beach, 26 degrees and over; Seal Beach and Alamitos Heights, 26 degrees and over; Coyote Hills, 23 degrees and over; Richfield, 25 degrees and over; Torrance, 25 degrees and over; Inglewood, 24 degrees and over; Santa Fe Springs, 35 degrees and over; Midway-Sunset, Elk Hills, Buena Vista Hills, 30 degrees and over. Also Associated pays 52 cents for oil of 11 to 13.9 gravity in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills, and Coalinga.

NATURAL GASOLINE MANUFACTURE

Refinery Consumption of Natural Off 12.3 Per Cent

Refiners drawing upon the Mid-Continent natural gasoline production for their needs took 12.1 per cent less natural during the first nine months of this year compared with the same months of last year, according to an analysis made by the Western Petroleum Refiners Association of the latest report of the Bureau of Mines. While the refiners consumed 12.1 per cent less, natural gasoline plants in the Mid-Continent produced 8.7 per cent less. On October 1, stocks at refineries were off 17 per cent compared with a year ago and stocks at natural gasoline plants were 11.7 per cent higher. This probably represents a less favorable picture for the status of the natural gasoline industry than exists now because of the large quantity of natural purchased by refiners, and taken out of the Mid-Continent for coastwise shipment after loading at the Gulf during October.

Although prices are not as strong as two weeks ago, the natural market has retained its relatively strong position. The detailed tabulation of the analysis of the Bureau of Mines report follows:

MID-CONTINENT NATURAL GASOLINE STATISTICS

(Quantities in thousand gallons)

Stocks at Natural Gasoline Plants, September 30

	First 9 mos. 1932	First 9 mos. 1933	Per cent change
Oklahoma	10,849	13,382	+23.3
Kansas	910	930	+ 2.2
Texas	7,019	6,945	— 1.1
Louisiana	820	726	—11 5
Arkansas	268	210	—21 6
Total	19,866	22,193	+11.7

Production

Oklahoma City	58,800	64,700	+10.0
Osage County	37,200	30,700	—17.5
Seminole	100,400	73,000	—27.3
Rest of State	92,000	95,900	+ 4.2
Okla. total	288,400	264,300	— 8 4
Kansas total	18,500	16,600	—10.3
Panhandle	137,100	126,000	— 8 1
North Texas	23,200	14,800	—36 2
West Central	64,600	63,100	— 2.3
Rest of State	54,200	56,300	+ 3 9
Texas total	279,100	260,200	— 6.8
La. total	36,200	28,600	—21.0
Ark. total	14,600	11,500	—21.2
Total	636,800	581,200	— 8.7

Shipments

Oklahoma	286,336	256,629	—10.4
Kansas	18,018	16,080	—10 8
Texas	278,086	259,643	— 6 6
Louisiana	36,618	28,589	—21.9
Arkansas	14,534	11,454	—21 2
Total	633,592	572,395	—9.7

Stocks at Local Refineries, September 30

Okla. and Kans.	462	1,344	+190.9
Inland Texas	252	294	+16.7
Coastal Texas	5,334	3,402	—36 2
N. La. and Ark.	126	84	—33.3
Coastal La.	none	none	
Total	6,174	5,124	—17.0

Used by Local Refiners

Okla. and Kans.	143,556	149,646	+ 4 2
Inland Texas	97,188	101,094	+ 4.0
Coastal Texas	103.614	80.598	—22.2
N. La. and Ark.	27,342	12,894	—52.8
Coastal La.	31,122	8,862	—71 5
Total	402,822	353,094	—12.3

Local Refinery Demand (Receipts)

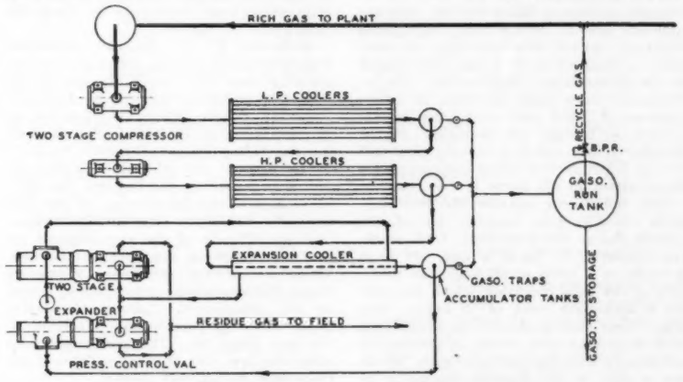
Okla. and Kans.	142,800	150,066	+ 5 1
Inland Texas	97.230	101,220	+ 4.1
Coastal Texas	97,482	74,802	—23 3
N. La. and Ark.	27,216	12,810	—52 9
Coastal La.	31,038	8,862	—71 4
Total	395,766	347,760	—12 1

Excess Production Over Local Demand

Okla. and Kans.	164,100	130,834	—20.3
Texas	84,383	84,178	— 0.2
La. and Ark.	7,454	18,428	
Total	241,034	233,440	— 3.2

Expanded Compressor and Double Pipe Coolers Lead to Higher Recovery

A later innovation in the compression method for extracting gasoline from natural gas was the use of refrigeration for subcooling the gas after it had passed through the regular water cooled coils. One of the earliest methods of refrigeration for this purpose consisted of expanding the residue gas through a relief valve into a double pipe cooler which cooled the high pressure gas as it passed from the water cooled coils to the high pressure accumulator tank. The water cooled coils were usually elevated so that the condensate produced would drain into the high pressure accumulator tank leaving the gas alone to pass through the expansion cooler. By this method it was possible to obtain temperatures during the summer months as low as 20° to 60° F., depending of course on the pressure of the gas both before and after expansion. At plants where the residue gas had to be returned to the leases under pressure, sufficient expansion of the gas could not be obtained to effect very low temperatures. Therefore this type of installation was limited in its application.



A more elaborate method of refrigeration was later developed which consisted mainly of an expander compressor and double pipe coolers. This process is illustrated on the accompanying flow diagram. The diagram shows a two-stage compression plant of the conventional type having low pressure and high pressure water cooled gas coolers. Gas leaving the top of the high stage accumulator tank passes through the expansion cooler into a second accumulater tank where it deposits any condensate produced. From the second accumulator tank the residue gas passes on to the expander compressor where it enters the high stage expansion cylinder at a pressure of about 200 pounds. Here the gas is expanded to a pressure of about 50 pounds and is discharged into a receiver. The temperature of the gas at this point may go as low as 0° F., causing condensate to deposit in the receiver. The gas then enters the low stage expansion cylinder, where further expansion takes place, and is discharged into the expansion cooler at a pressure ranging from 10-inch vacuum to 10 or 15-pound gauge pressure. At the lower pressure the temperature of the expanded gas may descend to as low as 40-50° F. below zero.

The gas expander is a regular steam engine driven by high pressure gas instead of by steam pressure. In the expansion of the gas useful work is performed in driving compressors which pump the residue gas back to the leases. The degree of expansion is regulated by hand cut-off valves in the same way a steam engine is regulated, thus regulating the temperature of the expanded gas. Due to the extreme low temperature at which these machines operate, considerable difficulty is experienced in lubricating the expansion cylinders. However, glycerine and flake graphite have been used with a fair degree of success as lubricants. Trouble is also encountered in keeping the expansion cylinders free of ice, which causes the expander to knock, and sometimes results in a broken bedplate or other parts of the machine.

The increase in production resulting from an expander installation depends largely upon the efficiency of the water cooled coils. In localities where the water supply during the summer months is inadequate, an increase in gross production as high as 25 to 30 per cent is not uncommon. This increase is due principally to the condensation of butane and propane which, being only temporarily in the liquid state, cause excessive evaporation in the stock tanks. It is very doubtful whether the net gain in production due to the lower temperatures obtained justifies the expense of an installation of this kind.

The expansion method of refrigeration in the gasoline industry has largely disappeared, and is being replaced by the evaporation process. In this process, refrigeration is effected by the evaporation of a volatile liquid such as butane or propane. This process will be described more in detail in a later article of this series.

Note — The above discussion is the third of a series tracing chronologically the major changes made in plant design and operation since the earliest compression plant. Subsequent articles will appear on this page to make a complete resume of progress up to the very latest types of equipment and methods.

TO DISCUSS GAS VISCOSITY

W. L. Nelson, professor of Petroleum Refining at the University of Tulsa, will give a discussion of the U. S. Department of Commerce Bulletin on "Viscosity of Natural Gas," as an added feature of the Mid-Continent Petroleum Division meeting of the A.S.M.E. to be held Friday, November 24, at 8 p.m. in the University Club.

Skelly to Build Gasoline Plant and Booster Station

This week the Skelly Oil Co. will start construction on a combination natural gasoline plant and booster station near Kingman City, Kans. The plant will be designed to process 10,000,000 feet of gas daily through low pressure absorbers and the residue gas will be delivered through the booster station to the lines of the Kansas Gas & Gasoline Co. The company holds a large tract of undeveloped acreage in the Kingman City area and the field which is under development is now referred to as the Cunningham Field. When the construction work is completed shortly after March 1, the plant will be operated at about one-half capacity and as additional gas is produced the volume process through the new plant will be increased. Operating at capacity the plant is expected to make 5,000 gallons of gasoline daily.

The installation will include several unique operating features. One of these is the exclusive use of open type water coolers for controlling fractionation, condensing and engine cooling water.

The gas will come to the plant and will be processed through the absorbers at about 30 pounds pressure. Five type 10 twin 180-horsepower Bessemer engines, each directly connected to 6¼"x20" and 14¼"x20" compressors, will take the residue gas from the absorbers and will boost it to 150 pounds pressure on the low side and then to 350 pounds on the high side. The gas will be delivered to the utility lines at about this pressure. Three type 80 Western gas engines will be installed to drive generators to supply the plant's electric needs. The completed installation will involve an investment of approximately $150,000.

Texas Co. Building Large Plant in Foard County

The Texas Co. has started construction work on a 10,000,000-foot natural gasoline plant on the Les. K. Johnson lease on the western edge of Foard County in the Wichita Falls district of Texas. An expenditure of approximately $150,000 is projected and construction work will be hastened so as to complete the work for starting the plant February 1, 1934.

Gas will be supplied from the company's own acreage under development in this new field. Thus far only one well has been completed but other tests are being made and much interest is being shown in the prospects of increasing the production of natural gasoline in this field as a result of the favorable tests on the gas from the first well. Much of the acreage in the field is now held by the Texas Co.

Along with the gas from this first well, approximately 200 bbls. of oil are being produced daily. This is the first natural gasoline plant to be built in Foard County.

PROPOSE NEW PLANT

CORPUS CHRISTI, Tex., Nov. 19.—A gasoline plant with a capacity of 50,000 gallons a day, which will entail the consumption of approximately 30,000,000 feet of gas daily, will be constructed southeast of Agua Dulce by Garland Clymore, according to announcement made here. Mr. Clymore, who has opened offices here, has leased approximately 1,000 acres of land. Wells will be drilled to the 5,000-foot level if production is not reached before that depth.

NEWS FOR SALES DEPARTMENTS

Tide Water Oil to Extend Sale of Veedol in Cans

NEW YORK, Nov. 20.—Tide Water Oil Co., one of the pioneers in the industry's campaign against the substitution of motor fuels and lubricants, has adopted hermetically sealed cans. The company has been marketing lub oil in this manner in the Canadian market for the past several months, through Tide Water Oil Co. of Canada, Ltd., and now extends the sale of canned Veedol to all of its foreign marketing operations. It is completing plans for the expansion of its sales activities on this product to domestic markets as well.

The dispenser, which is illustrated herewith, is equipped with cutting knives for opening the can. In its new method of packaging, "Veedol" is available in four sizes of cans, as follows: 1 U. S. quart, 1 imperial quart, 1 liter, and 5 U. S. quart. The cans are packed in a special new type of carton, 24 cans to the case, which also contains a special opening tool.

The steps which have been taken thus far in the general campaign against substitution of lub oils, are these:

1. Encouragement of sales in hermetically sealed, tamper-proof containers.
2. Utilization of tamper-proof locks for drums and highboys.
3. Education of the motorist to guard against substitution.
4. Inspection of sales outlets by marketing organizations.

The hermetically sealed quart can, in addition to protecting the consumer, likewise gives the dealer a marked advantage. The cans are easily stored and handled, and do not require the usual bulky and expensive storage facilities. This permits the dealer to stock smaller quantities of each grade, enabling him to have on hand at all times the required assortment of grades. The sealed cans are likewise easily displayed.

Commenting on its decision to utilize hermetically-sealed containers for its featured brand of lub oil, the Tide Water Co. says, "Protection of dispensing drums and drum pumps has been aimed at and several seals and locks that are said to be tamper-proof have been invented, but these measures are much less effective both in preventing substitution and in impressing the consumer, than the hermetically sealed can. The protection the

(Continued on Page 34)

Indictments Returned Against Jobbers Charged With Violating NRA Code

NEW YORK, Nov. 18.—Federal indictments charging officials of the Hercules Gasoline Filling Stations, Inc., with violation of the NRA code in that they compelled employes to work in excess of the maximum labor provision and also failed to post prices for their products as prescribed by law, were returned in Federal court in Brooklyn today. The defendants are David Lind, president, and Moe Levine, vice president, of the Hercules company, an independent jobbing concern which operates several filling stations in the borough of Brooklyn.

The indictments are the first to be brought against a filling station operator and are said to be the first indictments returned against any individual or company in connection with the enforcement of the Government's NRA codes. The indictments were made following an investigation of NRA code violations in this section authorized by Secretary of the Interior Ickes, and it is thought they will be the forerunner of other indictments to be returned in all parts of the country.

The indictment against the two officials contains nine counts. Six of the counts charge the defendants with working employes 11 hours a day, six days a week, or a total of 66 hours, in violation of the code provision which provides for a maximum week of 48 hours. The other three counts charge the defendants with failure to post prices at stations in accordance with the code provision. While not a part of the Federal charge, it is understood that the Hercules company had been selling petroleum products under the generally accepted price levels for the territory in which they operate.

Did Not Sign Code

An unusual feature of the case lies in the fact that defendant company has never signed the NRA code. In connection with this phase of the case attorneys for the defendants issued the following statement:

"We claim the Government has no right to indict our clients. The Government insists it had the right. It is a question of law and may bust the whole NRA question wide open. Our clients at no time subscribed to any code, although the company was in sympathy with the purposes of the NRA.

"Its present policy was no violation and was made absolutely necessary by acts of its competitors who, although having subscribed to the code for the petroleum industry under the NRA, had been violating it with impunity and seriously jeopardizing the business of the Hercules Gasoline Stations, Inc. The company contends that it had obeyed the spirit of the code to a greater extent than its competitors and refuses to be made the 'goat'."

Assistant U. S. Attorney Emanuel Bublick replied to this statement by explaining that the actual signing of the code does not enter into the legal aspects involving responsibility for violation of the provisions of all NRA codes. Regarding the filling station situation he said:

"In general the oil code is being observed in Brooklyn and Queens. The Gasoline Merchants Association of the two boroughs had more than 1,000 members and the officers of the organization report the members are obeying the law. There are several hundred proprietors of oil filling stations who do not belong to the association. Among the latter group there is considerable violation of the law going on. The merchants who obey the law feel the competition from those who do not very keenly.

"The National Recovery Act provides that violators of the law are liable to a fine of $500 for each offense and that every day the offense continues constitutes a violation. In addition to the criminal proceedings the Government is ready to proceed with the injunctive features of the NRA, which provide that when a business organization within the code fails to live up to them the Government is authorized to obtain a decree from the U. S. District Court to restrain it from continuing its business until it conforms to the NRA provisions."

NEW GASOLINE RAIL TRAIN

CHICAGO, Nov. 20.—Chrysler Corp., Fairbanks-Morse & Co., and the Goodyear Tire & Rubber Co. have entered into an agreement whereby Fairbanks-Morse will manufacture and sell the "railmobile," a gasoline propelled rail car.

The "railmobile" was demonstrated before 15 railroad vice presidents here. It carries from 20 to 50 passengers and is designed to replace present steam propelled equipment on short runs for carrying passengers and light baggage and for inspection tours by railroad officials. The car which was demonstrated consists of two units, one powered and the other a trailer.

CODE COMMITTEE ORGANIZING

PHILADELPHIA, Pa., Nov. 18.—Rapid organization of the Pennsylvania-Delaware Petroleum Code Committee and the local subcommittees, is reported by R. D. Leonard, chairman of the states committee, and vice president of the Pennzoil Co. When organization is completed approximately 600 leaders in the refining and other branches of the industry will be engaged in supervising enforcement of the code.

GENERAL MOTORS HELPED OIL

Progress of the automobile industry and its contribution to social changes during the past 25 years, which would not have been possible without parallel development of the oil and gasoline industry, will be emphasized by General Motors Corp. in observance of its silver anniversary. The observance, now under way, will be continued through the New York Automobile Show into 1934. General Motors' growth covers a period of American industrial expansion in which many of the large petroleum companies also saw their greatest development. General Motors' birthday, therefore, was a significant day for this closely allied oil industry. Likewise, the corporation has a very live interest in the oil industry by reason of Ethyl Gasoline Corp., which was formed jointly with Standard Oil Co. of New Jersey, in 1924, to market Ethyl fluid.

General Motors, in particular among motor car producers, benefits from the work of the oil companies, since one-third of the 24,000,000 vehicles in operation in the United States came off its assembly lines. And these in turn provide a mobile market for some 5,000,000,000 gallons of gasoline annually.

Extend Representation to Filling Station Employes

Standard Oil Co. has extended the benefits of its employes' representation plan to all sales department workers. When the plan was inaugurated several weeks ago, it was not feasible to include among the participants those agents of the company scattered through small towns and cities and the helpers at service stations, who were personal employes of service station managers. Difficulties have since been overcome, in the case of the service station helpers by changing their status and putting them on the company payroll.

Inclusion of the two classes increases the participation by 8,400 employes and brings the total number of participants in the sales department to 18,000. In the industrial relations plan in force in refineries 6,500 are participating, and in representation plans in certain subsidiaries there are 2,400 more participants.

The purpose of the several plans in operation is to give employes full opportunity to negotiate with the management in regard to any matter through representatives of their own choosing. The idea has been tried out in the refinery department of the company for many years and has proved highly successful in preventing development of misunderstandings or dissatisfaction with conditions.

ATTACKS OIL CODE

WASHINGTON, D. C., Nov. 18.—The constitutionality of the petroleum code, attacked by eight Detroit filling station operators, was defended by the Government in the District of Columbia Supreme Court as a necessary emergency measure.

Charles Fahy, assistant solicitor of the Interior Department, argued before Justice Jesse C. Adkins that the practice of issuing preminums which the Detroit men seek to continue constitutes the "worst form of price cutting" and should be prohibited.

Justice Adkins took the case under advisement after hearing the contentions of Mr. Fahy and Raymond M. Hudson, attorney for Harry Victor and seven other Detroit complainants. The arguments were on a motion made by Nathan R. Margold, Interior Department solicitor, to dismiss the suit for lack of cause for action.

"There may have been times when competition in a severe form was desirable," Mr. Fahy told Justice Adkins. "but now Congress by statute has decreed against unfair price wars."

ALFRED E. SMITH OIL OFFICIAL

NEW YORK, Nov. 17.—In connection with plans to enlarge its wholesale and retail distribution of heating oils and other products and also engage in the oil brokerage business, officials of the Meenan Oil Co. announced here this week that Alfred E. Smith, former governor of New York, had been elected chairman of the board of the company. The company, which has headquarters at 44 East Twenty-third, Manhattan, is an important factor in the heating oil business of this city, controlling the agency for a widely known burner and also a large distributor of heating oils.

William F. Kenny has been elected president of the Meenan company. R. G. Phelps, formerly president of the Sylvester Oil Co., subsidiary of the Colonial Beacon Oil Co. (Standard Oil Co. of New Jersey), is a vice president of the company. The Meenan Coal Co., an affiliated organization, is the largest independent coal dealer in New York City.

Bureau of Mines Statistics for the Month of September, 1933

SUPPLY AND DEMAND OF ALL OILS

(Thousands of barrels of 42 gallons)

	Sept., 1933	Aug., 1933	Sept., 1932	Jan.-Sept., 1933	Jan.-Sept., 1932
NEW SUPPLY:					
Domestic production:					
Crude petroleum	78,186	85,239	65,518	681,042	597,636
Daily average	2,606	2,750	2,184	2,495	2,181
Natural gasoline	2,791	2,824	2,836	24,693	27,486
Benzol*	155	171	73	1,080	778
Total production	81,132	88,234	68,427	706,815	625,900
Daily average	2,704	2,846	2,281	2,589	2,284
Imports:					
Crude petroleum	†2,146	3,673	1,893	25,492	37,518
Refined products	774	1,678	1,242	10,749	26,044
Total new supply, all oils	84,052	93,585	71,563	743,056	689,462
Daily average	2,802	3,019	2,385	2,722	2,516
Increase in stocks, all oils	651	7,076	‡8,016	25,167	‡17,775
DEMAND:					
Total demand	83,401	86,509	79,579	717,889	707,237
Daily average	2,780	2,791	2,353	2,630	2,581
Exports:					
Crude petroleum	3,182	3,141	2,113	26,801	21,389
Refined products	5,007	5,049	5,784	51,037	60,100
Domestic demand:					
Motor fuel	34,303	37,426	33,828	286,121	284,215
Kerosene	3,375	2,799	2,581	27,163	23,336
Gas oil and fuel oil	25,411	25,326	23,984	232,935	226,561
Lubricants	1,426	1,535	933	12,354	13,404
Wax	113	134	70	907	698
Coke	854	969	918	7,015	6,691
Asphalt	1,161	1,309	1,322	8,639	9,744
Road oil	933	1,042	1,067	4,877	5,681
Still gas (production)	3,989	4,250	3,336	34,199	30,796
Miscellaneous	105	148	87	1,100	1,645
Losses and crude used as fuel	3,543	3,381	3,597	24,739	22,986
Total domestic demand	75,212	78,319	71,682	640,051	625,757
Daily average	2,507	2,526	2,389	2,345	2,284
STOCKS:					
Crude petroleum	360,975	{ 356,424 } { $360,911 }	354,104	360,975	354,104
Natural gasoline	3,545	3,779	3,507	3,545	3,507
Refined products	254,301	{ 252,412 } { $253,480 }	256,512	254,301	256,512
Total, all oils	618,821	{ 612,625 } { $618,170 }	614,123	618,821	614,123
Days' supply	2,231	220	261	235	238

*Based upon production of coke reported to coal division by those by-product coke plants that recover benzol products. †Receipts of foreign crude as reported on form A-943. ‡Decrease. §New basis.

COMPARATIVE ANALYSES

(Thousands of barrels of 42 gallons)

	Sept., 1933 Total	Sept., 1933 Daily av.	August, 1933 Total	August, 1933 Daily av.	Jan.-Sept., 1933
CRUDE PETROLEUM:					
Runs to stills	75,316	2,511	79,151	2,553	646,892
Imports	2,146	72	3,673	118	25,492
Exports	3,182	106	3,141	101	26,801
MOTOR FUEL:					
Production	36,771	1,226	37,137	1,198	306,706
Imports	1	.....	1	.....	9
Bonded warehouses	.....	.....	.....	.....	2
For domestic use	1	.....	1	.....	7
Exports*	1,875	63	1,961	63	21,991
Stocks	53,062	.....	{ 51,314 } { †52,468 }	.....	53,062
Domestic demand	34,303	1,143	37,426	1,207	286,121
KEROSENE:					
Production	4,004	133	4,109	133	36,634
Imports	.....	.....	.....	.....	.....
Exports	731	24	650	21	6,100
Stocks	8,343	.....	8,445	.....	8,343
Domestic demand	3,375	113	2,799	90	27,165
GAS OIL AND FUEL OIL:					
Production	26,274	876	27,042	872	235,476
Transfers‡	244	8	150	5	5,935
Imports	750	25	1,649	53	10,567
Bonded warehouses	609	20	1,441	46	5,101
For domestic use	141	5	208	7	5,466
Exports	1,275	43	1,637	53	14,518
Stocks	133,910	.....	{ 132,914 } { †133,328 }	.....	133,910
Domestic demand	25,411	847	25,326	817	232,935
Railroads (Class 1)§	(¶)	(¶)	3,234	104	§26,035
Public utility power plants**	1,028	34	976	32	7,126
Other	(¶)	(¶)	21,116	681	199,774
Bunker oil	2,630	84	3,035	98	25,140
LUBRICANTS:					
Production	2,046	68	2,019	65	17,103
Imports	.....	.....	.....	.....	.....
Exports	839	28	457	15	6,117
Stocks	7,007	.....	7,226	.....	7,007
Domestic demand	1,426	48	1,535	50	12,354
WAX (thous. of pounds):					
Production	42,280	1,409	40,320	1,301	336,840
Imports	5,476	183	4,475	144	23,255
Bonded warehouses	224	8	.....	.....	1,176
For domestic use	5,252	175	4,475	144	22,079
Exports	22,096	737	19,857	641	189,190
Stocks	80,300	.....	85,924	.....	80,300
Domestic demand	31,284	1,043	37,550	1,211	254,323
COKE (short tons):					
Production	128,800	4,627	111,800	3,606	1,190,400
Stocks	987,000	.....	1,035,900	.....	987,000
ASPHALT (short tons):					
Production	217,800	7,260	246,900	7,965	1,678,300
Imports (natural)	400	13	1,600	52	13,500
Stocks	253,400	.....	268,100	.....	253,400

*Includes benzol, 23,947 bbls. in Sept., 1933. †New basis. ‡Net transfer in California. §Interstate Commerce Commission. ¶Not available. ‖January-August. **U. S. Geological Survey.

PRODUCTION OF CRUDE PETROLEUM BY DISTRICTS

(Thousands of barrels of 42 gallons)

	Sept., 1933 Total	Sept., 1933 Daily av.	August, 1933 Total	August, 1933 Daily av.	Jan.-Sept., 1933	Jan.-Sept., 1932
Appalachian:						
Pennsylvania Grade	1,870	63	1,893	61	15,547	16,496
Other (incl. Kentucky)	550	18	534	18	4,651	6,257
Lima-N.B. Ind.-Mich.	988	33	940	30	5,817	5,877
Ill.-S.W. Ind.	482	16	478	15	3,561	4,429
Mid-Continent:						
N. La. and Ark.	1,840	61	1,756	57	15,966	16,733
West Texas-S.E. N. Mex.	5,537	185	6,326	204	53,527	57,656
Other (Okla., Kans., N. Tex., etc.)	44,102	1,470	48,669	1,570	384,790	303,123
Gulf Coast	6,998	230	7,855	254	56,418	38,811
Rocky Mountain	1,337	41	1,248	40	11,005	13,486
California	14,674	489	15,537	501	129,760	134,763
Total	78,186	2,606	85,239	2,750	681,042	597,636

PRODUCTION OF CRUDE PETROLEUM BY STATES AND PRINCIPAL FIELDS

(Thousands of barrels of 42 gallons)

	Sept., 1933 Total	Sept., 1933 Daily av.	August, 1933 Total	August, 1933 Daily av.	Jan.-Sept., 1933	Jan.-Sept., 1932*
Arkansas	1,083	36	910	29	8,671	9,110
California:						
Kettleman Hills	1,899	63	1,937	63	16,632	16,441
Long Beach	2,009	67	2,289	74	19,339	21,043
Santa Fe Springs	1,490	50	1,658	53	14,397	17,129
Rest of State	9,276	309	9,653	311	79,392	80,152
Total California	14,674	489	15,537	501	129,760	134,763
Colorado	73	2	77	3	714	886
Illinois	412	14	411	13	3,055	3,800
Indiana:						
Southwestern	70	2	67	2	506	629
Northeastern	.....	.....	.....	.....	7	23
Total Indiana	70	2	67	2	513	652
Kansas	3,838	128	3,924	127	31,528	36,365
Kentucky	412	14	384	12	3,410	4,842
Louisiana:						
Gulf Coast	1,355	45	1,432	46	10,884	8,486
Rest of State	757	25	846	28	7,295	7,623
Total Louisiana	2,112	70	2,278	74	18,179	16,109
Michigan	893	30	846	27	5,033	5,025
Montana	178	6	170	5	1,520	1,929
New Mexico	1,252	42	1,269	41	10,335	9,704
New York	286	10	280	9	2,305	2,730
Ohio:						
Central and Eastern	275	9	298	10	2,417	2,729
Northwestern	95	3	94	3	772	829
Total Ohio	370	12	392	13	3,189	3,558
Oklahoma:						
Oklahoma City	6,899	230	8,163	263	59,366	26,933
Seminole	3,767	126	4,113	133	31,331	33,027
Rest of State	6,045	201	6,480	209	53,986	57,516
Total Oklahoma	16,711	557	18,756	605	135,733	117,476
Pennsylvania	1,108	37	1,112	36	9,284	9,487
Tennessee	.....	.....	1	.....	4	5
Texas:						
Gulf Coast	5,551	185	6,423	208	45,534	30,325
West Texas	4,318	144	5,095	164	43,577	48,240
East Texas	16,696	557	18,699	603	165,715	93,934
Rest of State	6,857	228	7,290	235	61,814	65,345
Total Texas	33,422	1,114	37,507	1,210	306,640	237,844
West Virginia	339	11	387	13	2,775	2,970
Wyoming:						
Salt Creek	580	19	590	19	5,345	6,122
Rest of State	373	13	371	12	3,141	4,256
Total Wyoming	953	32	961	31	8,486	10,377
Total U. S.	78,186	2,606	85,239	2,750	681,042	597,636

*Includes Alaska, Missouri and Utah.

INDICATED DOMESTIC DEMAND FOR CRUDE PETROLEUM

(Thousands of barrels of 42 gallons)

Domestic petroleum by fields of origin:	Sept., 1933 Total	Sept., 1933 Daily av.	August, 1933 Total	August, 1933 Daily av.	Jan.-Sept., 1933	Jan.-Sept., 1932
Appalachian:						
Pennsylvania Grade	2,137	71	2,060	66	16,802	16,005
Other (inc. Kentucky)	584	19	594	19	5,028	6,539
Lima-N. E. Ind.-Mich.	865	29	704	23	5,733	6,120
Ill.-S.W. Ind.	604	20	717	23	3,999	3,092
Mid-Continent:						
N. La. and Ark.	1,794	60	2,422	78	17,363	20,120
W. Texas-S.E. N. Mex.	5,818	194	6,342	204	56,694	59,396
East Texas	16,620	554	43,672	1,409	355,007	318,356
Other (Okla., Kans., N. Tex., etc.)	26,530	885				
Gulf Coast	6,365	209	7,186	232	56,028	38,823
Rocky Mountain	1,326	44	1,358	44	11,219	11,477
California	14,550	485	14,680	474	126,845	132,850
Total demand	77,093	2,570	79,736	2,573	653,718	613,276
Exports	3,182	106	3,141	101	26,801	21,389
Domestic demand	73,911	2,464	76,595	2,471	626,917	591,896
Foreign petroleum	2,789	93	3,342	108	28,707	34,308
Total domestic demand	76,700	2,557	79,937	2,579	655,624	626,204

SHIPMENTS FROM CALIFORNIA TO EASTERN PORTS IN THE UNITED STATES*

(Thousands of barrels of 42 gallons)

	Sept., 1933	Aug., 1933	Sept., 1932	Jan.-Sept., 1933	Jan.-Sept., 1932
Gasoline	1,130	505	871	8,737	6,843
Natural gasoline	.....	.....	72	31	289
Kerosene	182	77	78	1,121	286
Gas oil and Diesel oil	161	279	154	1,563	956
Fuel oil	190	21	.....	1,058	31
Lubricants	10	.....	.....	39	38
Asphalt	.....	.....	.....	1	6
Miscellaneous	1	.....	3	156	59
Total	1,674	882	1,178	12,756	8,487

*Compiled by E. T. Knudsen of the San Francisco office of the Bureau of Mines.

NUMBER OF WELLS COMPLETED IN THE UNITED STATES*

	Sept., 1933	Aug., 1933	Sept., 1932	Jan.-Sept., 1933	Jan.-Sept., 1932
Oil	955	643	915	5,103	7,969
Gas	96	88	71	640	753
Dry	264	294	368	2,444	2,595
Total	1,315	1,025	1,354	8,187	11,317

*From The Oil and Gas Journal and California office of American Petroleum Institute.

RECEIPTS OF CRUDE PETROLEUM ON THE ATLANTIC SEABOARD

(Thousands of barrels of 42 gallons)

Domestic	Sept., 1933	Foreign:	Sept., 1933
Pena. Grade	470	Venezuela	1,299
West Texas-S.E. New Mex.	2,354	Colombia	480
East Texas	3,512	Mexico	287
Other Mid-Continent	1,719	Other	30
Gulf Coast	3,514		
		Total	2,146
Total	11,569	Total receipts	13,715

CRACKING OPERATIONS

Fresh cracking stock charged to stills, bbls.	26,754,000
Gasoline produced by cracking, bbls.	16,004,000
Fuel oil produced by cracking, bbls.	12,991,000

XUM

STOCKS OF CRUDE PETROLEUM
(Thousands of barrels of 42 gallons)

EAST OF CALIFORNIA:	Sept. 30, 1933	Aug. 31, 1933*	Sept. 30, 1932
At refineries by location:			
East Coast: Domestic	9,530	9,190	9,269
Foreign	2,573	3,088	6,287
Appalachian	2,073	2,143	2,220
Indiana, Illinois, Kentucky, Michigan	3,830	3,857	3,529
Oklahoma, Kansas, and Missouri	6,123	5,892	4,520
Texas: Inland	2,802	2,695	1,345
Gulf Coast: Domestic	11,746	11,459	6,819
Foreign	3	42	74
Louisiana Gulf Coast: Domestic	3,433	3,627	2,307
Foreign	610	698	1,343
Arkansas and Inland Louisiana	1,074	1,007	706
Rocky Mountain	12,655	12,730	1,727
California	8,094	8,289	10,291
Total	64,546	64,718	50,437
At refineries by origin:			
Pennsylvania Grade	1,945	2,005	2,132
Other Appalachian (inc. Kentucky)	475	513	642
Lima-N.E. Indiana-Michigan	330	311	369
Illinois-S.W. Indiana	117	119	66
N. Louisiana and Arkansas	2,588	2,290	1,824
West Texas and S.E. New Mexico	3,876	3,857	4,534
East Texas	8,590	9,446	15,827
Oklahoma, Kansas, N. Texas, etc.	17,594	16,735	
Gulf Coast	5,117	4,616	5,376
Rocky Mountain	12,634	12,708	1,672
California	8,094	8,289	7,704
Foreign	3,186	3,829	10,291
Total	64,546	64,718	50,437
Pipe line and tank farm:			
Pennsylvania Grade	3,769	3,977	4,982
Other Appalachian (inc. Kentucky)	662	671	917
Lima-N.E. Indiana-Michigan	1,034	933	1,207
Illinois-S.W. Indiana	11,592	11,718	11,182
N. Louisiana and Arkansas	9,862	10,079	13,537
West Texas and S.E. New Mexico	29,599	29,911	32,026
East Texas	41,442	40,464	
Oklahoma, Kansas, N. Texas, etc.	135,567	135,466	165,406
Gulf Coast	12,590	12,403	12,958
Rocky Mountain	14,911	14,942	25,457
California (including producers')	28,312	28,379	30,976
Total	289,340	288,943	297,748
Producers' stocks east of California	7,089	7,250	5,919
Total refinable crude in the U. S.	360,975	360,911	354,104

*These figures for August 31 were reported to the Bureau on the new form A-947 of the Petroleum Administrative Board; because of revisions and transfers from one kind of storage to another they differ considerably from those previously reported in the August statement, P. 111. In order to establish the proper comparisons, it has been decided to retain both sets of figures, the old set comparing with data of previous months, those on the new basis comparing with succeeding data.

SHIPMENTS OF MOTOR FUEL BY PIPE LINES
(Thousands of barrels of 42 gallons)

	Sept., 1933	Aug., 1933	Sept., 1932	Jan.-Sept., 1933	Jan.-Sept., 1932
Motor fuel turned into lines	3,310	3,663	2,637	27,703	21,706
Motor fuel delivered from lines	3,321	3,660	2,642	27,731	21,441
Shortage	17	5	16	58	61
Stocks in lines and working tanks end of month	1,112	1,140	1,166	1,112	1,166

RECORD OF WELLS FOR IMPORTANT FLUSH FIELDS, SEPTEMBER, 1933*

	Completions: Oil	Gas	Dry	Total initial prod. (bbls.)	Aver. initial prod. (bbls.)	Drilling Sept. 30
Texas	539	10	116	681,600	1,300	806
East Texas	336	...	1	571,200	1,709	138
Gulf Coast	75	3	26	90,500	1,200	166
Conroe	36	1	3	66,800	1,900	34
West Texas	23	1	3	5,400	200	94
California	25	...	16	16,900	700	156
Kettleman Hills	1	...	...	1,300	1,300	18
Long Beach	5	...	1	1,000	200	17
Playa Del Rey	...	...	...	.....	.....	3
Oklahoma	61	6	31	40,500	700	306
Oklahoma County	7	1	...	7,000	1,000	31
Pottawatomie and Seminole Counties.	18	...	6	9,000	500	48
New Mexico	1	...	...	300	300	55
Lea County (Hobbs)	1	...	...	300	300	4
Other states	329	80	101	48,100	100	1,084
Total United States	955	96	264	787,400	800	2,407

*From The Oil and Gas Journal and California office of American Petroleum Institute.

STOCKS HELD BY REFINING COMPANIES, SEPTEMBER 30, 1933
(Thousands of barrels of 42 gallons)

	Gasoline: At refineries	Bulk and pipe lines	Total	Kerosene	Gas oil and distillate fuels	Residual fuel oils
East Coast	4,613	*9,428	14,041	2,251	5,105	4,685
Appalachian	1,241	1,022	2,263	278	476	298
Ind., Ill., Ky., etc.	3,877	3,018	6,895	587	2,773	2,547
Okla., Kans., Mo.	3,795	1,556	5,351	610	1,510	‡3,157
Texas Inland	1,827	171	1,998	189	588	2,589
Texas Gulf	4,185	*780	4,965	2,102	2,260	3,686
Louisiana Gulf	1,060	477	1,537	659	2,045	858
Ark. and La. Inland	195	83	278	25	253	540
Rocky Mountain	898	.....	898	133	153	464
California	7,956	4,235	11,291	1,459	3,997	94,926
Total	28,747	*20,770	49,517	8,343	20,160	‡113,750

	Wax (thous. of pounds): Lubricants	Crude scale	Refined	Total	Coke (tons)
East Coast	2,282	9,014	11,493	20,507	57,200
Appalachian	876	12,389	1,224	13,613	5,100
Ind., Ill., Ky., etc.	852	7,535	1,156	8,691	97,200
Okla., Kans., Mo.	398	1,822	1,659	3,481	136,500
Texas Inland	74	.....	407	407	114,500
Texas Gulf	1,513	2,091	7,301	9,392	346,000
Louisiana Gulf	62	3,991	1,156	5,147	22,700
Ark. and La. Inland	18	.....	.....	.....	300
Rocky Mountain	166	17,990	1,072	19,062	104,790
California	766	.....	.....	.....	102,200
Total	7,007	54,832	25,468	80,300	987,000

	Asphalt (tons)	Road oil	Miscellaneous	Unfinished oils	Natural gasoline
East Coast	80,100	131	71	7,954	67
Appalachian	11,700	21	27	1,591	1
Ind., Ill., Ky., etc.	56,500	130	11	7,478	15
Okla., Kans., Mo.	3,900	232	20	4,661	32
Texas Inland	.....	21	2	1,533	7
Texas Gulf	3,800	34	11	12,296	81
Louisiana Gulf	27,800	15	.....	1,851	.....
Ark. and La. Inland	17,300	8	3	525	2
Rocky Mountain	3,100	146	8	2,397	4
California	44,200	270	217	†7,244	2,666
Total	253,400	1,008	370	47,530	2,875

*Figures for August 31 on new basis: East Coast, 9,324,000; Texas Gulf, 576,000; United States, 19,651,000. †Includes 3,516,000 bbls. crude gasoline. ‡Figure for August 31 on new basis: Oklahoma, Kansas, Missouri, 3,344,000; United States, 114,380,000.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, SEPTEMBER, 1933
(Thousands of barrels of 42 gallons)

	Straightrun: Total	Per cent (*)	Per cent (†)	Cracked: Total	Per cent (*)	Per cent (†)	Nat. gaso.: Total	Per cent (†)	Gasoline: Total	Per cent (*)
East Coast	2,877	20.8	49.2	2,860	20.6	49.0	107	1.8	5,844	41.4
Appalachian	817	27.0	48.8	831	27.4	49.6	27	1.6	1,675	54.4
Ind., Ill., etc.	2,723	25.5	44.0	3,268	30.5	52.8	199	3.2	6,190	56.0
Okla., Kans., Mo.	2,733	29.7	51.4	2,086	22.6	39.2	502	9.2	5,321	52.3
Texas Inland	1,577	31.8	59.9	772	15.5	29.3	283	10.8	2,632	47.3
Texas Gulf	2,707	20.3	42.3	3,439	25.8	53.8	249	3.9	6,395	46.1
Louisiana Gulf	676	19.7	49.3	672	19.5	49.0	23	1.7	1,371	39.2
Ark. and La. Inland	367	21.8	49.9	340	20.2	46.3	28	3.8	735	42.0
Rocky Mountain	325	27.1	44.0	346	28.9	46.8	68	9.2	739	56.0
California	3,366	24.2	59.3	1,390	10.0	24.5	923	16.2	5,679	34.2
Total	18,168	24.1	49.7	16,004	21.3	43.7	2,409	6.6	36,581	45.4

*Per cent of crude run. †Per cent of total gasoline output.

RUNS TO STILLS AND OUTPUT OF REFINERIES, SEPTEMBER, 1933
(Thousands of barrels of 42 gallons)

INPUT—	Crude oil: Domestic	Foreign	Total	Unfinished oils rerun	Natural gasoline	Total input
East Coast	11,213	2,657	13,870	655	107	14,632
Appalachian	3,031	.....	3,031	464	27	3,522
Ind., Ill., Ky., etc.	10,691	.....	10,691	496	199	11,386
Okla., Kans., Mo.	9,214	.....	9,214	352	502	10,068
Texas Inland	4,966	.....	4,966	66	283	5,315
Texas Gulf	13,288	40	13,328	815	249	14,392
Louisiana Gulf	3,343	93	3,436	56	23	3,515
Ark. & La. Inland	1,652	.....	1,652	380	28	2,090
Rocky Mountain	1,198	.....	1,198	66	68	1,332
California	13,900	.....	13,900	285	*923	15,108
Total	72,526	2,799	75,316	3,635	2,409	81,360

OUTPUT—	Gasoline	Kerosene	Gas oil and distillate fuels	Residual fuel oils	Lubricants	Wax (thous. of lbs.)
East Coast	5,844	702	1,108	3,826	678	22,400
Appalachian	1,675	266	219	392	399	5,880
Ind., Ill., Ky., etc.	6,190	363	810	1,569	135	280
Okla., Kans., Mo.	5,321	600	771	1,684	199	2,240
Texas Inland	2,632	269	212	1,332	24	280
Texas Gulf	6,395	832	1,235	3,359	410	3,360
Louisiana Gulf	1,371	327	360	1,048	34	7,280
Ark. and La. Inland	735	65	148	564	.....	.....
Rocky Mountain	739	43	50	225	17	560
California	5,679	536	1,462	6,144	150	.....
Total	†36,581	4,004	6,375	20,143	2,046	42,280

OUTPUT—Cont.	Coke (tons)	Asphalt (tons)	Road oil	Still gas	Miscellaneous	Unfinished products	Shortage
East Coast	16,400	94,400	70	747	25	917	33
Appalachian	2,200	10,400	8	229	20	125	100
Ind., Ill., Ky., etc.	53,800	43,100	218	845	20	579	150
Okla., Kans., Mo.	25,200	6,300	149	428	9	411	327
Texas Inland	6,200	.....	19	129	8	362	296
Texas Gulf	20,600	16,500	1	918	4	762	270
Louisiana Gulf	5,200	13,300	5	127	.....	22	96
Ark. and La. Inland	200	10,000	—2	48	2	416	58
Rocky Mountain	8,400	900	33	85	1	53	37
California	600	22,900	310	432	31	175	59
Total	138,800	217,800	811	3,989	120	3,822	1,426

*Includes 105,000 bbls. run through pipe lines. †Includes 510,000 bbls. special naphthas.

Washington Hearings Cause Slow Market

(Continued from Page 25)

Stocks on October 1 at East Coast refineries had been reduced to 20,507,000 pounds or less than half of the total of the previous year. These stocks were divided as follows: Crude scale, 9,014,000 pounds and refined wax, 11,493,000 pounds.

Since the close of September there has been some reduction in refinery operations in this territory as shown in the A.P.I. reports which appear with charts in this issue. It is felt, however, that gasoline production is still too high to assure a sound market during the remainder of the fall and winter months.

Prices

The past week brought no important changes in prices on tank car shipments. The weakness in gasoline previously noted is not sufficiently general to be reflected in quotations. Export prices on gasoline at the Gulf Coast are being maintained with little new business being placed. The same situation applies to kerosene, the surplus of which is limited at the coast. The cold weather had brought a spurt in the dealer and jobber demand for furnace oil distillates but supplies are adequate and there are no indications of higher prices. In fact complaints are heard that certain dealers are cutting prices to consumers at New England points. Gas oils, industrial fuels and marine are steady.

The advance in lubricating oils predicted by some a week ago has not materialized. Consumption of motor oils is showing a seasonal decline and some market observers are stressing the necessity of reducing output at refineries to prevent inventory accumulations. Two refiners whose prices on steam refined stocks and bright stocks have been above the general price levels for domestic and export movement, last week reduced their quotations. The wax price advances first announced early in the month are now generally accepted.

Tide Water Oil to Extend Sale of Veedol in Cans

(Continued from Page 32)

sealed can assures is simple and understandable and lends itself to dramatization."

In the export lub oil field, Tide Water states, substitution is carried on as effectively as in the United States, according to information reaching the company from its distributors abroad, and other sources. The estimates made by several of the company's distributors in Europe indicate, for example, that fully 20 per cent of the volume of branded lub oils is being substituted. It is interesting to note that the tactics used in cheating the motoring public are more or less the same the world over. The company's German distributor reports: "Old screw top cans are in many cases refilled with some substitute oil, and when the man goes to get the can, he only goes through the motion of removing the seal." From France the company learns that, "Most cases of substitution occur in the refilling of receptacles of small content. When the can contains no more of its original oil, the retailer refills it with some kind of cheap oil and uses it as soon as the next motorist calls at his garage. When the car draws up, the attendant goes inside to get the can and pretends to remove the special sealed capsule."

"It is to be hoped," Tide Water concludes, "that similar efforts will be made in all markets to run down the business of substitution. It is necessary for distributors of quality brands to avail themselves of the latest medium of safeguarding their interests as well as those of the honest dealer and the consumer."

New Pools in Prospect in Callahan and Archer Counties; 15 Locations Made in West Texas

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Nov. 20.—There were 15 locations staked in the West Texas district this week. The Mid-Kansas Oil & Gas Co. announced nine of these which are for the Yates Field in Pecos County to displace locations formerly made by Sproles & Oneal, receivers for Fred Turner, Jr., and Fred Turner, Sr. Those locations were on staggered vacancy strips which the Mid-Kansas Oil & Gas Co. purchased from the Turners. Some of the new locations are located on the strips but the majority are offsets to tests which the aforementioned receivers started and the Mid-Kansas company completed as producers after it acquired the strips.

The locations abandoned were Mid-Kansas Oil & Gas Co.'s Nos. 2-A, 5-A, 7-A, 8-A, 1-B, 3-B, 4-B and 1-C Fred Turner, Jr.

The Gulf Production Co. staked location for four tests in the Hutchings-O'Brien area in northern Ward County. Two other locations were staked in this county, both in the south end, or Grand Falls area.

The Sinclair Prairie Oil Co. staked a location for a test on the Allen ranch in Loving County. This will be the first test drilled by this company since it acquired the acreage in the merger of the Sinclair Consolidated Oil Co. and the Prairie Oil & Gas Co., the latter company having held the lease now ready to be drilled.

There were five completions reported in West Texas this week. Ward County received two of the three producers completed. The one, Eppenauer's No. 1 University, mentioned in the accompanying completion report, extended the Hutchings-O'Brien area of north Ward County by a mile. An offset is now being drilled by the Humble Oil & Refining Co.

Successful Acid Treatment

Wooten's No. 2-A Edwards, located in Section 17, Block 33, Township 2s, T & P. Survey, Glasscock County, responded exceptionally well when treated with acid before completion. It topped the pay at 2,158 feet and before treating was estimated good for only 10 or 15 bbls. per day. After treating it was completed for an initial production of 483 bbls. of oil per day. Total depth is 2,204 feet but it was plugged back to 2,171 feet before treating and completing. Such a successful result will no doubt lead other operators to treat their wells with acid before completion if they do not show sufficient natural production. Many old wells in this area are also expected to be treated with acid regardless of some of the treating being unsuccessful on some of the wells already treated in the pool.

The Continental Oil Co. successfully recompleted its No. 1 Overton in the Howard County Pool when deepened to 2,520 feet. An increase in oil was logged from 2,405-64 feet and another from 2,515-19 feet. The new initial production was 120 bbls. in 12 hours, pumping. This was an old well drilled deeper.

Continental Oil Co.'s No. 9-B University, in Section 39, Block 9, approximately one-half mile east of the nearest Ordovician producer in the Big Lake Field, Reagan County, is scheduled to plug back to 8,720 feet after drilling to 8,850 feet and testing only 7 bbls. of oil per hour with an unreported amount of water. At 8,825 feet it made 5 bbls. of oil per hour plus water. This well apparently marks the eastern limits of the Ordovician producing area in this pool.

Cranfill & Reynolds treated their No. 3 T. Willingham, in Section 199, Block 1, B.B.B.&C. Survey, northeast Fisher County, with 1,000 gallons of acid and a 32-bbl. oil load and have an estimated 500-bbl. well in the making. The well logged top of the pay at 3,110-11 feet and an increase from 3,128-30 feet. Total depth is 3,130 feet. It swabbed 275 bbls. of oil in 24 hours before treating with acid.

Condor Petroleum Co. is now testing its No. 1 F. Steele, in the same area, Fisher County. Total depth is 3,210 feet. It was treated with 1,000 gallons of acid and an oil load of 37 bbls. and 5 bbls. of water. It was formerly producing at 2,934 feet, making an initial production of 40 bbls. of oil and 10 bbls. of water daily at that depth.

Loffland Brothers are awaiting a string of smaller tools preparatory to testing their No. 1 Tubbs, in Section 9, Block B-27, western Crane County. Six-inch casing was set at 4,281 feet before testing the showing of oil from 4,295-4,300 feet and from 4,315-25 feet. Total depth is 4,339 feet.

RANGER DISTRICT

The Oplin Oil Co.'s No. 1 T. A. Irvin, Section 349, G. W. Denton Survey, located 3½ miles northeast of Oplin and 4 miles northwest of the old Empire Gas & Fuel Co.'s Johnson producer which made a high initial production but afterwards produced salt water, now promises the opening of another pool for southwestern Callahan County. It made two heads of oil from pay at 4,490 feet, but water showed up to interfere with the oil production. Casing was to be run and cemented to shut off this water preparatory to making a test to determine the ability of the potential producer. The Anzac Oil Corp. of Coleman County is drilling an Ellenburger test a few miles southeast of the Irvin test, and due to the showing made in the latter the Anzac test will be more closely watched and the operators encouraged. If the Irvin test makes a good producer the latter company may consider its chances much better for making a producer in its deep test.

A test drilled three-quarters of a mile southeast of the Irvin test, by the Hucony Oil & Gas Co., had a showing of oil at 4,250 feet but was abandoned when it failed to make a commercial producer. If acid had been used in treating that test it might have been a good producer, but it was plugged before the advent of acid treatment of wells in this district.

WICHITA FALLS DISTRICT

A new pool is apparently in the making approximately 2 miles west of the Hutchinson Pool in Archer County. W. T. Hutchinson and others own the test which is located in the southeast corner of the D.L.&C. Survey, Abstract 446, and a short distance west of a 2,350-foot dry hole drilled about two years ago by the Lawson Oil Co. The sand in the new test was topped at 1,065 feet, drilling 5 feet into the pay before shutting down to test. Outcome of the test has not yet been reported. The well was estimated good for about 100 bbls. If it makes a commercial producer this part of the county can expect to get more attention, especially in the immediate vicinity of the well.

The Texas Co. made an important announcement this week. It is to build a 10,000,000-foot casinghead gasoline plant having 500 pounds ultimate pressure and to cost in the neighborhood of $125,000 on its Les. K. Johnson lease in Section 36, S.P.R.R. Survey, western Foard County.

Sixteen miles of 3-inch line will be laid from the plant to a five-car loading rack located on the Panhandle & Santa Fe Railroad at Foard City for shipping out gasoline manufactured in the plant. Survey is now being made for this line.

The company has one well now producing on this lease. The well is good for 3,600 bbls. of 49 gravity oil per day, but the daily allowable is only 864 bbls. It is also producing around 2,250,000 feet of rich gas per day, the gas containing approximately 4 gallons of gasoline per 1,000 feet, which is a high gasoline content.

Permanent Water Supply

The company is now completing a dam on a creek 3 miles northeast of the No. 3 Johnson producer for a permanent water supply for the plant and future development on the 10,000-acre block which the company holds around the well. Another test is to be drilled about 2,000 feet northwest of the present producer as soon as government permit is received for same.

A small camp is to be constructed near the well and enlarged as the development and production increases and more men are needed in the pool.

There were 29 locations staked in the district during the week, the majority of which were in the lime areas of Archer and the new shallow pools of Young County. Twenty completions were reported.

The district produced a daily average of 56,965 bbls. this week, approximately 465 bbls. above the new allowable. However, this was close to 800 bbls. per day decrease under the previous week's production.

PANHANDLE

The Panhandle district has been curtailed to 42,000 bbls. per day under the latest proration schedule worked up by the Railroad Commission and in accordance with the national oil administrator's request to cut back production in Texas. Demand for oil from this district has been increasing during the past few months, and companies have been drilling a considerable number of wells in order to keep up their production and to meet the demands.

There were five locations staked in the district during the week. There were five new wells completed, with two old wells being deepened in an effort to increase production.

A block of approximately 50,000 acres has been leased near Dalhart in Dallam County and a 4,000-foot test is to be drilled by Eben Warner in Section 2, Block 2, B.&B. Survey, approximately 8½ miles northwest of Dalhart. A. M. James and Lon C. McCrory assembled the block on which two other tests may be drilled later.

Production in the Panhandle averaged 39,135 bbls. per day this week. This is nearly 3,000 bbls. below the allowable, ample proof that the operators in this district are willing to accede to the proration allocations in hopes of seeing the return of better times in the industry, and especially for their district which has suffered from low prices and other discouraging factors during the past three years.

Wildcat Operations in West Texas

Week Ending November 20

BREWSTER COUNTY

Company, well, farm name, section and block—	Remarks
C. M. Joiner's No. 1 McIntyre	T.D. 1,010 ft. (no report).

COKE COUNTY

C. D. Hagerty et al's No. 1 Gaston, in Joseph Young Sur. No. 11	Drlg. 810 ft.

CONCHO COUNTY

Mintex Oil Co.'s No. 2 Waring Estate, 660 ft. from N line, 150 feet from W line SW ¼ Sec. 2120, A. T. Robinson Sur.	S.D. 2,660 ft.

CRANE COUNTY

Gulf Prod. Co.'s No. 1 Edwards, 330 ft. from S line and 330 ft. from E line of Sec. 21, Blk. B-18, Public School Land Sur.	Drlg. 1,100 ft.
Loffland Bros.' No. 1 Tubbs, 1,334 ft. from N line, 1,320 ft. from W line, Sec. 9, Blk. 27-B, P.S.L. Sur.	Cleaning out 4,339 ft.

CROCKETT COUNTY

Porter Rankin's No. 1 Todd, 1,500 ft. from N line and 3,020 ft. from E line of Sec. 68, Blk. UV, G.C.&S.F. Sur.	Location.
Atlantic Oil & Prod. Co.'s No. 1 Holt, 1,980 ft. from N line and 660 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur.	Rigging up.

(Continued on Page 40)

COMPLETIONS IN WEST TEXAS

Glasscock County

Wooten's No. 2-A Edwards, top pay 2,158 feet; before treating with acid production was estimated from 10 to 15 bbls. of oil per day; initial production after acid treatment 483 bbls. of oil per day; total depth 2,204 feet; plugged back to 2,171 feet.

Howard County

Continental Oil Co.'s No. 1 Overton (old well drilled deeper), increase in oil from 2,405-64 feet, and from 2,515-19 feet, initial production 120 bbls. of oil in 12 hours, total depth 2,520 feet.

Irion County

Perry Fox's No. 1 Roark, dry and abandoned, total depth 1,405 feet.

Pecos County

Easter-McCurdy's No. 2-A Smith, top pay 856-70 feet, initial production 132 bbls. of oil per day pumping, total depth 876 feet.

Ward County

Dr. Eppenauer's No. 1 University, top pay 2,592-99 feet, increase at 2,725-30 feet, initial production 98 bbls. of oil per day flowing through tubing, total depth 2,730 feet. Gulf Production Co.'s No. 21 Hutchings, top pay 2,570 feet, increase in pay from 2,730-43 feet, initial production 211 bbls. of oil in 16 hours, flowing through tubing, total depth 2,758 feet.

Second Test in Anderson County Probably Dry; Leon County Test May Be Only Gas Well

By L. E. BREDBERG

DALLAS, Tex., Nov. 20.—The second test to top the Woodbine sand horizon in the Long Lake area, southwestern Anderson County, now appears as a probable dry hole. This test is Humble Oil & Refining Co.'s No. 1 Dietz, just west of the Trinity River in the Simon Sanches Survey No. 6, Freestone County. It was reported last week as running around 65 feet lower on the top of the Austin chalk, this week it appears as running around 130 feet lower on top of the Woodbine sand section. The Long Lake discovery well of the Tide Water Oil Co. and Texas Seaboard Oil Co. topped the Woodbine sand at 5,147 feet with an elevation of 227 feet. The Dietz test topped the Woodbine sand at 5,272 feet with an elevation of 222 feet, showing the best to be considerably downdip from the former well and having smaller chances for making a producer.

The Dietz test cored from 5,268-80 feet recovering 7 feet of formation, 4 feet of which was hard black poker chip shale and 3 feet of gray sand which had a faint odor and stains of oil. It appeared as water sand but did not taste salty. Another core is now being taken to be followed by a drill stem test. This test is approximately 2¾ miles northwest of the Long Lake discovery.

The Tide Water Oil Co. and Texas Seaboard Oil Co.'s second test on their Long Lake block, 1,866 feet due west of their discovery well, is down 1,690 feet fishing for a bit. If this test proves a producer the two companies holding the 24,000-acre block surrounding the discovery will probably begin laying a line to the Gulf Coast soon after it is completed. At the present time the discovery well is connected to a main line of the Gulf Pipe Line Co. The well, however, is producing only 47 bbls. net oil daily through twelve-sixty-fourths inch choke with 3,000,000 feet of gas, the gas being piped to the Humble-Dietz test for drilling. Pressure on the well is 2,030 pounds on tubing and 2,160 pounds on casing. The well is making 5 per cent b.s. and water producing through the present choke.

Leon County Wildcat

Shell Petroleum Corp. and others' No. 1 Beggs in the John Carter Survey, Leon County, wildcat which is sure to make a heavy gas producer, now looks as if it has small chances for making an oil producer and proving an oil field for the 17,500-acre block which this company and seven associates hold around the test. The test cored from 5,910-13 feet recovering 7 feet of fine hard cemented sand, sandy shale and streaks of shale. It cored from 5,913-25 feet recovering 9 feet of core which showed the same formation, with no showings of oil. It is now coring ahead. The first test on this block and structure, No. 1 Phillips, topped the Woodbine sand at 5,938 feet. It drilled to 6,300 feet, was plugged back to test several streaks of saturated sand all of which proved futile and caused abandonment.

If this second test proves an oil failure it will be plugged back to produce the gas, some of which will be used to drill a third test on the block. The United Gas Co. and Lone Star Gas Co. have lines in this area, either of which would probably connect to the gas producing area if that is all that the area proves itself after drilling a third test.

The interesting test for which location has been made by the E. L. Smith Oil Co. and others on the William Simpson farm in the Alfred Penn Survey, almost midway between the Leon County gasser of Shell Petroleum Co. and others and the Long Lake discovery in southwest Anderson County, is expected to spud within a short time. This will be an exceptionally interesting test due to its location on the trend between the two discovery wells.

Location has been reported on Gulf Production Co.'s No. 1 John Whitley in the John Gossett Survey, west of Elkhart in Anderson County, and another test is proposed by the Sun Oil Co. on the Robert N. Erskine farm west of Elkhart in the same county. Both companies hold large blocks in this area, which is about 8 miles southeast of the Long Lake discovery. Six tests were drilled near the town of Elkhart in the past but none went deep enough to pick up the Woodbine sand. The deepest was drilled by J. E. Winans about 1 mile west of town. This test went to 3,600 feet before plugging.

T. C. Cardwell and others have materials on ground for drilling a test on the M. J. Derden farm in the F. M. Davis Survey, Anderson County. Another test is to be drilled on the Bacon Gin lot in the Simon Sanchez Survey No. A-59 in the same county. Anderson, Freestone and Leon Counties are expected to see considerable drilling activity during the next few months, unless a series of dry holes discourages further wildcatting in this new sector where leasing and royalty buying has been spirited since the Long Lake discovery. The results of the Humble Oil & Refining Co.'s No. 1 Dietz on the east edge of Freestone County and Shell Petroleum Corp. and others on the Beggs farm in Leon County have already been disparaging to the areas. However, there is plenty of room in the several counties in this sector of the Woodbine sand district for several Woodbine sand fields.

Limestone and Navarro

C. M. Joiner and others are drilling on their No. 1 S. A. Knapp in the Luke Moore Survey, one-half mile north of the Falls County line in Limestone County, and H. T. Braselton and others have staked location on the H. L. Albritton farm 1½ miles east of Roane in Navarro County. This location is 150 feet out of the northwest corner of a 1,000-acre tract. The two tests are in counties adjoining Freestone County.

East Central Texas Wildcats

Week Ending November 20

Company, well, farm name, section and block—	Remarks:
ANDERSON COUNTY	
Standard of Kansas' No. 1 A. W. Johnson, 565 ft. from N line and 420 ft. from E and W lines of 22.8-ac. tract, Simon Sanches Sur.	Derrick.
Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 2 Long Lake Plantation, 1,866 ft. due W of Tide Water and Texas Seaboard Oil Co.'s No. 1 Long Lake, Simon Sanches Sur.	Waiting on cmt. to set.
ANGELINA COUNTY	
H. C. Jennings et al's No. 2 Colmorgan, 1,320 ft. from N line and 1,800 ft. from E line of 200-ac. tract, J. Messingill Sur.	Set csg. 1,027 ft.
J. M. Seward et al's No. 1 L. J. Dearman, 500 ft. from S and W lines of Dearman S 20-ac. tract, 2½ miles SE of Zavalla, J. T. Peavy Sur.	Drlg. 1,480 ft.
BOWIE COUNTY	
R. W. Lynn and W. R. Rolfe's No. 1 Mrs. R. D. Hart, 330 ft. out of NE cor. of Hart 20-ac. tract, 1 mile E of Nash, Thomas Price Sur.	Location.
CHEROKEE COUNTY	
Cranfill & Reynolds' No. 1 Southern Pine Lbr. Co., 320 ft. out of SE cor. of survey, N. Arrington Sur.	Derrick.
A. F. Richardson's No. 1 P. Wood, 660 ft. from N line and 3,300 ft. from E line of 498-ac. tract, 14 miles E of Jacksonville, on Cherokee-Rusk County line, Ignacio Sanches Sur.	Derrick.
ELLIS COUNTY	
Beckham et al's No. 1 L. S. R. Wood, 150 ft. from N line and 330 ft. from E line of Wood 186-ac. tract, A. D. Lagarza Sur.	Derrick.
FRANKLIN COUNTY	
Van Emon et al's No. 1 O. S. Maxton, 910 varas W and 910 varas S of NE cor. of survey, John Brown Sur.	Derrick.
FREESTONE COUNTY	
Clyde Creighton's No. 1 Holley Bros., 854 ft. from W and center of N and S lines of lease, A.B.&M. Sur.	Preparing to drill deeper.
Daniels Oil & Royalty Co.'s No. 1 T. F. Young, 750 varas from W line and 250 varas from S line of survey, L. Liggins Sur.	Derrick.
Hughes et al's No. 1 H. A. Shaw, 330 ft. out of NE cor. of H. A. Shaw 138-ac. tract, Simon Sanches Sur. No. 5	Location.
Humble Oil & Refining Co.'s No. 1 Dietz Brothers, 1,000 ft. out of southerly SE cor. of 1,000-ac. tract, Simon Sanches Sur. No. 6	Coring 4,970 ft.
GREGG COUNTY	
G. T. Bankenship's No. 1 R. B. White, 100 ft. from S line and 100 ft. from W line of survey, M. D. Moore Sur.	Drlg. 2,450 ft.
Burton et al's No. 1 D. Smith, 500 ft. N and 50 ft. W of NW cor. of J. S. Carrithers Sur.	Drlg. 1,500 ft.
Elliott et al's No. 1 Benson, 175 ft. from S line and center E and W lines of tract, W. P. Chisum Sur.	Location.
J. D. Hall et al's No. 1 Mrs. Gladys Utzman, 5,859 ft. from N line and 6,980 ft. from W line of survey, M. V. Winkle Sur.	Location.
Humble Oil & Refining Co.'s No. 1 Rogers Lacy, 2,050 ft. N and 330 ft. E of SW cor. of lease, N. Screws Sur.	Drlg. 1,987 ft.
Randall's No. 1 Williams, C of 1-acre tract, State Sur.	Rig up and S.D.
HENDERSON COUNTY	
Campbell and Champlin's No. 1 R. S. Ansley, 106 varas S and 623 varas W of NE cor. of lease, 6 miles SE of Buffalo, N. H. Thompson Sur.	Derrick.

(Continued on Page 40)

Cauble and Thompson's No. 1 Bobbett test in the Daniel Fuller Survey, Wood County, remains disappointing to the several majors and independents who purchased acreage in the vicinity of the test. It is now shut down at 4,393 feet trying to pull drill stem stuck at 2,200 feet. It has not picked up the Austin chalk. Elevation is 502 feet.

Van Zandt County

George Ray and others' test on the W. C. Wilson farm in the H. Cotes Survey, Van Zandt County, was abandoned this week at a total depth of 3,882 feet. Elevation is 440 feet. Top of the sand was cored at 3,847 feet.

H. H. Panton of Corsicana has made locations for two tests in the Nacatosh sand area north of the Van Field in Van Zandt County. They are both in the southeast corner of the W. S. Brannon farm in the John Goodman Survey. This area has seen the drilling of several tests in the past few months, since the Peden and Olsen test made a small producer, opening the way for drilling other tests to the Nacatosh section. However, but three small producers were drilled to this sand, the remainder proving dry holes.

EAST TEXAS FIELD

There were 97 more wells completed in the East Texas Field this week, good weather sustaining rapid drilling. Seventy-three locations were staked. Cutting back the allowable in the field has only helped to spur drilling, especially by those companies having a low per well density, as some of the major producers have. The field is now curtailed to 394,000 bbls. per day. The highest per well allowable is 57 bbls. and the lowest, for the marginal wells, is 20 bbls. per day.

The Stanolind Oil & Gas Co. and Pure Oil Co.'s No. 2 Ras Lacy, in the J. H. Sparks Survey, in the gas-producing area on the extreme southern end of the Joiner area, southern Rusk County, was abandoned this week at a total depth of 3,657 feet. It topped the Woodbine sand at 3,644 feet.

Purchase of Storage Oil

A most interesting announcement was made by the Humble Oil & Refining Co. this week in regard to some 360,000 bbls. of East Texas crude which it has been holding in storage in that district for the producers. This crude was run to storage between September 12, 1932, and May 13, 1933, when the company announced it would charge 10 cents per barrel gathering charge and 2 cents per month storage charges.

The company now agrees to purchase the oil at the market price or wait until January 1 and pay an average of its December price posting for similar grade crude. It will absorb the 10-cent gathering fee, charge only 2 cents per barrel for the first month the oil was impounded and 1 cent per month per barrel for the remainder of the period it has been in storage. This will net the producers a much higher price for this oil than under the former ruling.

This plan is subject to approval by the oil administration at Washington, the oil to be withheld from the market until a later date set by the administration authorities. The committee on allocations for the Texas Division of the Regional Planning and Co-ordination Committee has given its O.K. to this plan. Producers who have had their oil stored in the Humble tanks for several months will no doubt be willing to re-

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lease it under these conditions and the present price as it will turn loose a considerable amount of cash.

Upshur County

C. H. Lyons and others' No. 1 E. L. Starr, in the J. N. Stephens Survey, on the north end of the East Texas Field, Upshur County, was temporarily abandoned this week at a total depth of 3,721 feet after swabbing a little oil and salt water. It topped the sand at 3,634 feet. It is between the Rash and Starr producers and a little to the south. The Rash producer opened a separate area to the north of the main field, and from a deeper pay, about two years ago. It is in the Eubanks Survey.

Distribution Report

Distribution reports from the field show a daily average distribution of 446,790 bbls. while production ran 404,000 bbls., daily average runs from storage averaging 42,790 bbls.. This is a decrease in daily runs from storage from the past few weeks' figures, major pipe line companies taking out over 100,000 bbls. per day some weeks. Runs to local refineries fell to 40,920 bbls. per day during the past week, a drop of nearly 11,000 bbls. per day under the week ending November 9. Two more refineries were shut down this week than were shut down the previous week.

COMPLETIONS IN EAST TEXAS DISTRICT

North Gregg County

Adams and Lyles' No. 8 T. Anderson, top sand 3,482 feet, initial production 65 bbls. per hour through open tubing, total depth 3,507 feet. Amada Oil Co.'s No. 4 D. A. Magrill, top sand 3,655 feet, initial production 50 bbls. per hour through open tubing, total depth 3,667 feet. Amatex Oil Co.'s No. 4 Jones, top sand 3,641 feet, initial production 65 bbls. in one-half hour through open tubing, total depth 3,660 feet. Arkansas Fuel Oil Co.'s No. 21 W. T. Burnside, top sand 3,469 feet, initial production 53 bbls. in one-half hour through three-quarters inch tubing choke, total depth 3,494 feet; No. 6 F. T. Rembert, top sand 3,465 feet, initial production 16 bbls. in one-quarter hour through three-quarters inch tubing choke, total depth 3,485 feet. Atlantic Oil Producing Co.'s No. 3 Clements, top sand 3,623 feet, initial production 45 bbls. per hour through open tubing, total depth 3,655 feet; No. 7 Harris, top sand 3,501 feet, initial production 60 bbls. per hour through open tubing, total depth 3,576 feet.

East Texas Oil & Refining Co.'s No. 4 W. Christian, top sand 3,595 feet, initial production 80 bbls. in one-half hour through open tubing, total depth 3,630 feet; No. 4 Sparks, top sand 3,673 feet, initial production 48 bbls. per hour through open tubing, total depth 3,709 feet. Empire Gas & Fuel Oil Co.'s No. 7 J. W. Akin, top sand 3,539 feet, initial production 21 bbls. in one-quarter hour through open tubing, total depth 3,600 feet; No. 15 T. W. Lee, top sand 3,522 feet, initial production 65 bbls. per hour through open tubing, total depth 3,557 feet; No. 6 Rodgers, top sand 3,575 feet, initial production 75 bbls. per hour through open tubing, total depth 3,635 feet. Faith Oil Co.'s No. 7 J. C. Barrett, top sand 3,670 feet, initial production 42 bbls. in one-half hour through open tubing, total depth 3,693 feet. Gulf Production Co.'s No. 48 Judge, top sand 3,519 feet, initial production 70 bbls. per hour through open tubing, total depth 3,545 feet; No. 54 Judge, top sand 3,537 feet, initial production 70 bbls. per hour through open tubing, total depth 3,562 feet.

Humble Oil & Refining Co.'s No. 18 W. W. Holland, top sand 3,559 feet, initial production 59 bbls. per hour through three-quarters inch tubing choke, total depth 3,600 feet; No. 10 A. L. Hughes, top sand 3,601 feet, initial production 63 bbls. per hour through three-quarters inch tubing choke, total depth 3,640 feet; No. 10 W. R. Hughes, top sand 3,650 feet, initial production 59 bbls. per hour through three-quarters inch tubing choke, total depth 3,700 feet; No. 24 W. R. Hughes, top sand 3,650 feet, initial production 16 bbls. per hour through open tubing, total depth 3,680 feet. Iowa Payne Oil Co.'s No. 3 J. W. Akin, top sand 3,508 feet, initial production 80 bbls. per hour through open tubing, total depth 3,600 feet. J. M. Jones and others' No. 1 Bramlett, abandoned hole, total depth 3,645 feet. Lesh & McCall's No. 7 M. Young, top sand 3,540 feet, initial production 125 bbls. per hour through open tubing, total depth 3,584 feet.

Magnolia Petroleum Co.'s No. 6 A. J Green, top sand 3,578 feet, initial production 90 bbls. per hour through open tubing, total depth 3,596 feet. Prince Brothers' No. 7 Williams, top sand 3,530 feet, initial production 80 bbls. per hour through open tubing, total depth 3,567 feet. Shell Petroleum Corp.'s No. 9 S. C. Fishburn, top sand 3,495 feet, initial production 21 bbls. in one-quarter hour through open tubing, total depth 3,551 feet; No. 25 J. M. Moore, top sand 3,533 feet, initial production 35 bbls. per hour through open tubing, total depth 3,555 feet. Simms and Stanolind Oil & Gas Co.'s No. 24-B Flewellen, top sand 3,666 feet, initial production 22 bbls. in one-quarter hour through open tubing, total depth 3,674 feet. Sinclair Prairie Oil Co.'s No. 12 Mary Lawson, top sand 3,506 feet, initial production 30 bbls. in one-quarter hour through open tubing, total depth 3,550 feet. Stanolind Oil & Gas Co.'s No. 7 Albright, top sand 3,513 feet, initial production 21 bbls. in one-quarter hour through 2-inch tubing, total depth 3,615 feet.

Sun Oil Co.'s No. 16 J. W. Akin, top sand 3,560 feet, initial production 75 bbls. per hour through open tubing, total depth 3,629 feet. Tide Water Oil Co.'s No. 9 A. F. Sheppard, top sand 3,678 feet, initial production 13 bbls. in 10 minutes through open tubing, total depth 3,688 feet. Twin Oil Co.'s No. 10 M. Bonner, top sand 3,612 feet, initial production 25 bbls. in one-quarter hour through open tubing, total depth 3,618 feet. Yount Lee Oil Co.'s No. 1 V. A. Skipper and Gardner, top sand 3,524 feet, initial production 49 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,590 feet.

South Gregg County

Adams and Lyles' No. 8 L. Howard, top sand 3,615 feet, initial production 80 bbls. per hour through open tubing, total depth 3,630 feet. American Liberty Oil Co.'s No. 9 L. D. Griffin, top sand 3,568 feet, initial production 125 bbls. per hour through open tubing, total depth 3,630 feet. East Texas Oil & Refining Co.'s No. 6 E. Mitchell, top sand 3,575 feet, initial production 100 bbls. per hour through open tubing, total depth 3,618 feet. Burke Fields and others' No. 2 I.&G.N., top sand 3,527 feet, initial production 100 bbls. per hour through open tubing, total depth 3,580 feet. Galvez Oil Co.'s No. 6 M. T. Cole, top sand 3,526 feet, initial production 90 bbls. per hour through open tubing, total depth 3,655 feet. Humble Oil & Refining Co.'s No. 14 J. A. Knowles, top sand 3,571 feet, initial production 60 bbls. per hour through open tubing, total depth 3,627 feet. Invincible Oil Co.'s No. 4 Weiss, top sand 3,540 feet, initial production 125 bbls. per hour through open tubing, total depth 3,560 feet. J. E. Lucas Oil Co.'s No. 1 J. S. King, top sand 3,540 feet, initial production 25 bbls. per hour through open tubing, total depth 3,600 feet.

John Mabee's No. 12 M. T. Cole, top sand 3,523 feet, initial production 100 bbls. per hour through open tubing, total depth 3,541 feet. Marine Oil Corp.'s No. 3 W. R. Crim, top sand 3,605 feet, initial production 125 bbls. per day through open tubing, total depth 3,625 feet. W. S. Randall's No. 1 T. Neal, top sand 3,591 feet, initial production 125 bbls. per hour through open tubing, total depth 3,605 feet. Rhoads Drilling Co.'s No. 24 Sabine River, top sand 3,496 feet, initial production 50 bbls. in one-half hour through open tubing, total depth 3,521 feet; No. 19 Sabine River, top sand 3,540 feet, initial production 50 bbls. in one-half hour through open tubing, total depth 3,550 feet. Shell Petroleum Corp.'s No. 16-A B. F. Laird, top sand 3,604 feet, initial production 42 bbls. in one-half hour through open tubing, total depth 3,622 feet.

Sinclair Prairie Oil Co.'s No. 30-A A. A. King, top sand 3,459 feet, initial production 15 bbls. in one-quarter hour through open tubing, total depth 3,500 feet; No. 33-B A. A. King, top sand 3,450 feet, initial production 20 bbls. in one-quarter hour through open tubing, total depth 3,503 feet; No. 35-B. A. A. King, top sand 3,451 feet, initial production 20 bbls. in one-quarter hour through open tubing, total depth 3,486 feet; No. 36-B A. A. King, top sand 3,440 feet, initial production 20 bbls. in one-quarter hour through open tubing, total depth 3,485 feet. Sun Oil Co.'s No. 25 M. T. Cole, top sand 3,517 feet, initial production 57 bbls. per hour through open tubing, total depth 3,543 feet; No. 10 William Penticost, top sand 3,611 feet, initial production 61 bbls. per hour through open tubing, total depth 3,650 feet. Texas Co.'s No. 23 M. T. Cole, top sand 3,495 feet, initial production 85 bbls. per hour through open tubing, total depth 3,555 feet. Tide Water Oil Co.'s No. 7 William Clayton, top sand 3,560 feet, initial production 48 bbls. per hour through open tubing, total depth 3,594 feet; No. 7 W. D. Lacy, top sand 3,540 feet, initial production 11 bbls. in 10 minutes through open tubing, total depth 3,561 feet.

North Rusk County

Gulf Production Co.'s No. 79 Laird, top sand 3,607 feet, initial production 97 bbls. per hour through open tubing, total depth 3,632 feet. Humble Oil & Refining Co.'s No. 100 L. D. Crim, top sand 3,575 feet, initial production 122 bbls. per hour through open tubing, total depth 3,595 feet; No. 102 L. D. Crim, top sand 3,608 feet, initial production 75 bbls. per hour through open tubing, total depth 3,624 feet; No. 11-A B. F. Laird, top sand 3,580 feet, initial production 142 bbls. per hour through open tubing, total depth 3,590 feet; No. 7 R. H. and W. L. Laird, top sand 3,610 feet, initial production 134 bbls. per hour through open tubing, total depth 3,624 feet. Kathleen Oil Co.'s No. 5 J. N. Peterson, top sand 3,632 feet, initial production 86 bbls. per hour through open tubing, total depth 3,671 feet.

Magnolia Petroleum Co.'s No. 5 William Jernigan, top sand 3,651 feet, initial production 31 bbls. in one-quarter hour through open tubing, total depth 3,699 feet. Navarro Oil Co.'s No. 11 R. N. Brightwell, top sand 3,630 feet, initial production 75 bbls. per hour through open tubing, total depth 3,675 feet. Republic Production Co.'s No. 5 Scroggins, top sand 3,704 feet, initial production 30 bbls. in one-quarter hour through open tubing, total depth 3,707 feet. Shell Petroleum Corp.'s No. 14 R. Russell, top sand 3,716 feet, initial production 30 bbls. in one-quarter hour through open tubing, total depth 3,759 feet. Stanolind Oil & Gas Co.'s No. 5 M. B. King, top sand 3,682 feet, initial production 50 bbls. in 45 minutes through 2-inch tubing and three-quarters inch tubing choke, total depth 3,749 feet. Sam K. Vierson's No. 5-A Andy Givens, top sand 3,645 feet, initial production 70 bbls. per hour through open tubing, total depth 3,660 feet. Wheelock and Collins' No. 3 D. Wells, top sand 3,672 feet, initial production 60 bbls. per hour through open tubing, total depth 3,695 feet.

South Rusk County

Ajo Oil Co.'s No. 7 Sanders, top sand 3,663 feet, initial production 50 bbls. per hour through open tubing, total depth 3,752 feet. American Liberty Oil Co.'s No. 7-C Young, top sand 3,664 feet, initial production 90 bbls. per hour through open tubing, total depth 3,685 feet. Collins-Stroube-Stroube's No. 8 L. J. Pinkston, top sand 3,628 feet, initial production 60 bbls. in one-half hour through open tubing, total depth 3,668 feet. East Texas Oil & Refining Co.'s No. 8 O. H. Grissom, top sand 3,719 feet, initial production 60 bbls. per hour through open tubing, total depth 3,721 feet. Great State Oil Co.'s No. 1 Giles, top sand 3,703 feet, initial production 65 bbls. per hour through open tubing, total depth 3,718 feet.

Humble Oil & Refining Co.'s No. 9 Jones-Fuller, top sand 3,736 feet, initial production 75 bbls. per hour through 1-inch tubing choke, total depth 3,757 feet; No. 36-A M. and R. Kangerga, top sand 3,673 feet, initial production 102 bbls. through open tubing, total depth 3,718 feet; No. 9-B H. White, top sand 3,629 feet, initial production 65 bbls. per hour through open tubing, total depth 3,713 feet. Hunt Production Co.'s No. 9-B Bradford, top sand 3,587 feet, initial production 20 bbls. in three hours, pumping, total depth 3,684 feet. Mid-Kansas Oil & Gas Co.'s No. 14 H. C. and G. W. Burton, top sand 3,665 feet, initial production 84 bbls. per hour through open tubing, total depth 3,658 feet; No. 46 W. T. Grissom, top sand 3,658 feet, initial production 80 bbls. per hour through open tubing, total depth 3,669 feet; No. 20 S. H. Moores, top sand 3,651 feet, initial production 50 bbls. per hour through open tubing, total depth 3,739 feet. O'Hearne Oil Co.'s No. 6 M. M. McMillan, top sand 3,660 feet, initial production 60 bbls. per hour through open tubing, total depth 3,685 feet.

Sinclair Prairie Oil Co.'s No. 42 W. D. Kinney, top sand 3,691 feet, initial production 25 bbls. in one-quarter hour through open tubing, total depth 3,702 feet; No. 43 S. D. Kinney, top sand 3,640 feet, initial production 38 bbls. in one-quarter hour through open tubing, total depth 3,651 feet. Stanolind and Pure Oil companies' No. 2 Ras Lacy, top Pecan Gap 2,679 feet, base 3,042 feet, top Austin chalk 3,441 feet, top cap rock 3,603 feet, top Woodbine sand 3,644 feet, drill stem test 3,596-3,657 feet, tested 29 joints of mud and salt water in 15 minutes; plugged and abandoned; total depth 3,657 feet; J. H. Sparks Survey. Summitt Drilling Co.'s No. 10 Mayfield Grocery, top sand 3,744 feet, initial production 135 bbls. per hour through open tubing, total depth 3,749 feet. Sun Oil Co.'s No. 5 Mason, top sand 3,607 feet, initial production 25 bbls. in one-half hour through open tubing, total depth 3,674 feet; No. 7 Selman, top sand 3,658 feet, initial production 40 bbls. in one-half hour through open tubing, total depth 3,707 feet. Tide Water Oil Co.'s No. 5 Flannigan, top sand 3,678 feet, initial production 26 bbls. in one-quarter hour through open tubing, total depth 3,700 feet. Ward Oil Co.'s No. 18 E. S. Thrash, top sand 3,786 feet, initial production 55 bbls. per hour through open tubing, total depth 3,831 feet.

Smith County

Mid-Kansas Oil & Gas Co.'s No. 27 J. H. Sharp, top sand 3,660 feet, initial production 64 bbls. per hour through open tubing, total depth 3,661 feet. Weaver-Crim Oil Corp.'s No. 6 T. Stone, top sand 3,764 feet, initial production 75 bbls. per hour through open tubing, total depth 3,768 feet.

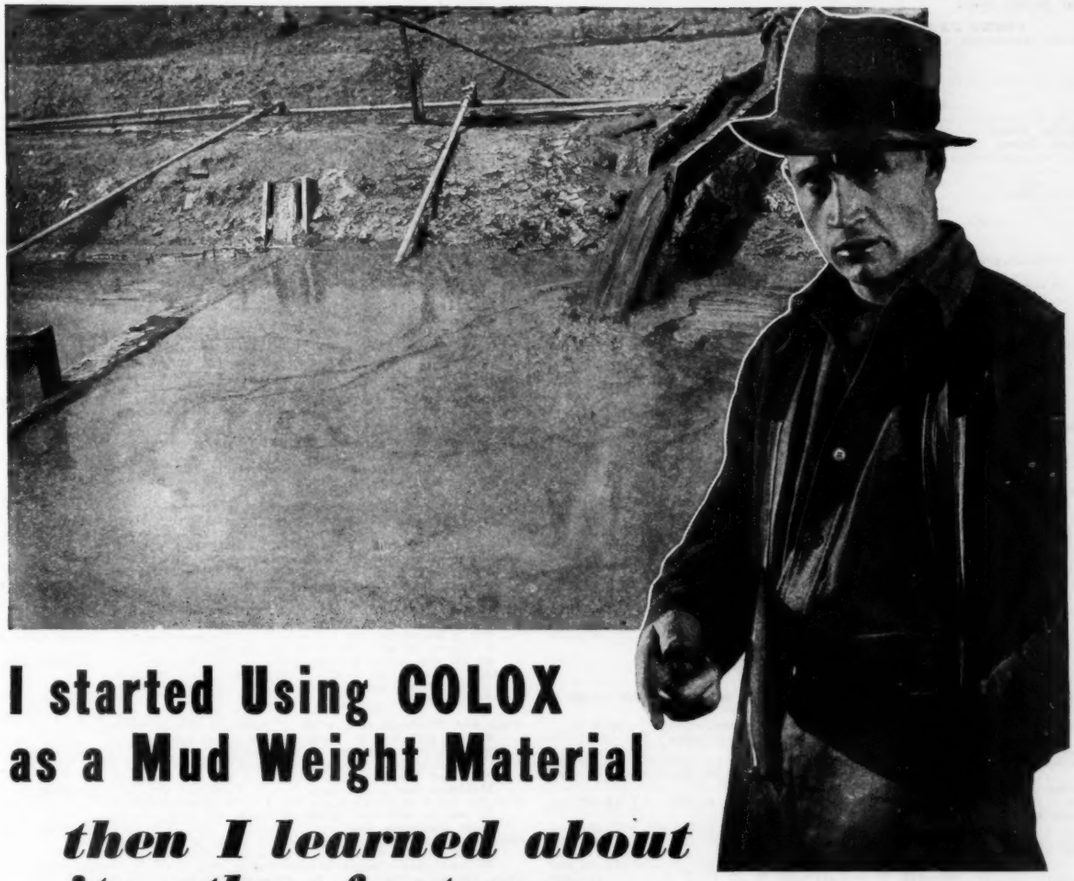
Upshur County

C. H. Lyons and others' No. 1 E. L. Starr, top sand 3,634 feet, temporarily abandoned, total depth 3,721 feet, swabbed little oil and salt water, J. N. Stephens Survey. Stroube & Stroube's No. 8 R. J. Mackey, top sand 3,624 feet, initial production 40 bbls. per hour through open tubing, total depth 3,631 feet. Sun Oil Co.'s No. 1 J. O. Byrne, top sand 3,685 feet, initial production 33 bbls. per hour through open tubing, total depth 3,689 feet. Joe Zeppa's No. 3 Victory, top sand 3,655 feet, initial production 50 bbls. per hour through open tubing, total depth 3,662 feet.

WILDCAT COMPLETIONS

Van Zandt County

George Ray and others' No. 1 W. C. Wilson, top Austin chalk 2,768 feet, base 3,211 feet, top sand 3,847 feet, dry and abandoned, total depth 3,882 feet. H. Coates Survey, elevation 440 feet.



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Summary of California Oil Field Operations, September, 1933

According to figures collected by the American Petroleum Institute, the total production of crude oil in California for September amounted to 14,673,846 bbls., an average of 489,129 bbls. per day. This is a decrease of 12,059 bbls. per day under August production.

Twenty-five wells were completed during the month with an initial daily production of 16,933 bbls., compared with 17 wells completed during August with an initial production of 10,381 bbls.

CRUDE PETROLEUM PRODUCTION
(Figures of production and stocks are in barrels of 42 gallons)

Group No. 1—	Barrels per month	Daily average Sept., 1933	Aug., 1933	Sept., 1932
Coalinga	387,526	12,917	10,476	10,475
Elk Hills	371,651	12,388	12,881	12,372
Fruitvale	122,965	4,099	4,354	4,905
Kern River	263,169	8,772	9,081	8,467
Kettleman Hills—Middle Dome	16,470	549	669	...
Kettleman Hills—North Dome	1,882,132	62,738	61,800	59,173
Lost Hills-Belridge	233,458	7,782	7,592	8,566
McKittrick	51,379	1,713	1,722	1,758
Midway-Sunset	1,476,096	49,203	47,452	49,467
Mountain View	12,465	416	427	...
Mount Poso	262,543	8,751	8,167	7,750
Round Mountain	92,819	3,094	2,948	2,069
Wheeler Ridge	13,737	458	463	507
Group No. 2—				
Capitan	369	12	18	...
Elwood	434,168	14,472	13,953	13,864
Rincon	52,821	1,761	1,971	1,841
San Miguelito	36,378	1,212	1,194	1,350
Santa Barbara	19,978	666	775	474
Santa Maria	109,212	3,640	3,303	3,242
Summerland	2,419	81	95	113
Ventura Avenue	1,094,178	36,473	35,657	35,727
Ventura-Newhall	103,166	3,439	3,157	3,535
Watsonville	1,800	60	60	62
Group No. 3—				
Coyote	316,397	10,547	10,021	10,181
Domingues	600,814	20,027	20,444	17,192
Fullerton (Brea Olinda)	263,118	8,771	7,620	8,262
Huntington Beach	1,155,471	38,516	48,560	22,291
Inglewood	344,162	11,472	11,501	13,294
Lawndale	6,413	214	320	352
Long Beach	2,008,894	66,963	73,836	71,199
Los Angeles-Salt Lake	25,582	853	876	1,034
Montebello	192,311	6,410	5,896	6,021
Playa Del Rey	324,619	10,821	11,052	14,387
Potrero	8,432	281	327	672
Richfield	221,022	7,367	7,489	6,162
Rosecrans	93,592	3,120	3,076	3,089
Santa Fe Springs	1,489,832	49,661	53,498	58,928
Seal Beach	335,883	11,196	11,511	12,080
Torrance	211,935	7,065	6,727	6,237
Whittier	34,473	1,149	1,189	1,073
Total September	14,672,846	489,129	501,188	478,371
Total August	15,536,841	501,188		
Decrease	863,995	12,059		

TOTAL STOCKS HELD BY CALIFORNIA OIL COMPANIES, BOTH INSIDE AND OUTSIDE THE UNITED STATES

	Sept. 30, 1933	Aug. 31, 1933	Sept. stock decreases	Sept. 30, 1932
Heavy crude and all grades of fuel, gas and Diesel oils	100,374,380	100,889,883	515,503	101,896,450
Refinable crude	37,078,402	37,154,302	75,900	40,267,673
Finished gasoline, engine distillate and natural gasoline	14,713,602	14,771,372	57,769	15,427,816
Crude gasoline and naphtha distillate	3,511,186	3,558,897	47,711	4,890,334
All other stocks	*7,484,947	†7,612,379	127,432	‡7,425,949
Total all stocks	163,162,518	163,986,833	824,315	169,908,222
Barrels of coke included	*638,887	†648,462	.....	‡652,802

OIL FIELD DEVELOPMENT

Group No. 1—	New rigs up	Active drilling	Producers completed	Daily initial output	Active producing	Abd. wells Drillers	Abd. wells Producers
Coalinga	0	0	0	0	642	0	0
Elk Hills	0	0	0	0	198	0	0
Fruitvale	1	4	0	0	59	0	0
Kern River	0	0	0	0	1,004	0	0
Kettleman—Middle Dome	0	0	0	0	1	0	0
Kettleman—North Dome	4	18	1	1,250	39	0	0
Lost Hills-Belridge	0	3	0	0	150	0	0
McKittrick	0	0	0	0	116	0	0
Midway-Sunset	0	3	1	63	1,840	0	0
Mountain View	0	6	1	62	2	0	0
Mount Poso	4	7	3	1,428	104	1	0
Round Mountain	1	3	1	200	31	1	0
Wheeler Ridge	0	0	0	0	34	0	0
Group No. 2—							
Capitan	0	0	0	0	2	0	0
Elwood	0	3	1	617	44	0	0
Rincon	0	0	0	0	35	0	0
San Miguelito	0	0	1	1,540	3	0	0
Santa Barbara	0	2	0	0	13	0	0
Santa Maria	0	0	0	0	166	0	0
Summerland	0	0	0	0	63	0	0
Ventura Avenue	1	3	1	717	161	0	0
Ventura-Newhall	0	9	1	50	460	0	0
Watsonville	0	0	0	0	7	0	0
Group No. 3—							
Coyote	3	2	0	0	88	0	0
Domingues	8	7	3	1,541	43	0	0
Fullerton	0	0	0	0	358	0	0
Huntington Beach	10	25	8	5,515	393	0	3
Inglewood	0	0	0	0	215	0	0
Lawndale	0	0	0	0	8	0	0
Long Beach	4	17	5	950	977	1	2
Los Angeles-Salt Lake	0	0	0	0	170	0	0
Montebello	3	2	0	0	168	0	0
Playa Del Rey	1	3	0	0	182	0	2
Potrero	0	0	0	0	11	0	0
Richfield	0	8	0	0	180	0	0
Rosecrans	0	0	0	0	63	0	1
Santa Fe Springs	0	2	0	0	534	1	3
Seal Beach	0	0	0	0	114	0	0
Torrance	0	0	0	0	402	0	0
Whittier	0	0	0	0	141	0	0
Miscellaneous drilling	2	26	0	0	0	13	0
Group No. 4—							
Buttonwillow gas field	0	0	0	0	0	0	0
Dudley Ridge gas field	0	1	0	0	0	0	0
Goleta gas field	0	0	1	gas	0	0	0
Total September	40	150	25	16,933	9,240	16	11
Total August	58	143	17	10,381	9,110	15	9
Increase	*18	8	8	6,552	130	1	2
Average for year 1933	16	168	15	13,049	8,928	16	14
Average for year 1931	22	207	21	20,370	8,911	20	15
Average for year 1930	80	434	63	48,710	9,632	21	27

*Decrease.

East Central Texas Wildcats

(Continued from Page 36)

HOPKINS COUNTY

Hager and Ashby's No. 1 J. Worsham, 330 ft. out of SE cor. of Worsham 161-ac. tract, 3 miles S of Sulphur Bluff, Alex. O. Wetmore Sur. ..... Coring 3,452 ft.

HUNT COUNTY

Meade and McKennie's No. 1 Love, 300 ft. from N line and 6,390 ft. from W line of 95-ac. tract, John Gilisky Sur. ..... Rig up.

H. O. Shawver et al's No. 1 J. H. Jones, 740 varas S of NE cor. and 75 varas from E line of tract, 6½ miles NE of Greenville, L. Ferguson Sur. ..... Drlg. 773 ft.

LEON COUNTY

Cooper et al's No. 1 W. H. Cozart, 1,000 ft. from SE cor. of 266-ac. tract in SW part of county, Thomas Gardner Sur. ..... Derrick.

Shell Petroleum Corp.'s No. 1 Begga, center of 123.6-ac. tract, John Carter Sur. ..... Coring 5,867 ft.

E. L. Smith's No. 1 W. P. Simpson, 1,320 ft. from S and E lines of survey, Alfred Penn No. 693 Sur. ..... Location.

Standard Oil of Kansas' No. 1 A. W. Johnson, 466 ft. from NE line and 466 ft. from NW line of 100-ac. tract, Simon Sanches Sur. No. 7 ..... Location.

LIMESTONE COUNTY

C. M. Joiner et al's No. 1 S. A. Knapp, 1,000 ft. from N and W lines of tract and survey, 1½ miles N of Falls County line, Luke Moore Sur. ..... Location.

MORRIS COUNTY

Argo and Key's No. 1 Hall, 330 ft. from NW cor. of survey, 3 miles NE of Dangerfield, L. Jordan Sur. ..... S.D.

Buchanan et al's No. 2 Staggers, 150 ft. from W line and 500 ft. from S line of survey, 3 miles NW of Dangerfield, John D. Nelson Sur. ..... Derrick.

NAVARRO COUNTY

H. T. Braselton et al's No. 1 H. L. Albritton, 150 ft. out of NW cor. of 100-ac. tract, 1½ miles E of Roane ..... Location.

Syam Oil Co.'s No. 1 W. B. Coates, 150 ft. out of SE cor. of 59-ac. tract, McKinney & Williams Sur. ..... Drlg. 3,860 ft.

RUSK COUNTY

Merrick et al's No. 1 D. C. Joiner, 6,500 ft. from N line and 2,780 ft. from W line of survey, F. Cordova Sur. ..... Location.

Pansy Oil Co.'s No. 1 W. H. Frederick, 600 ft. from N line and 4,800 ft. from W line of survey, Ximenes Sur. ..... Drlg. 1,350 ft.

Rodgers et al's No. 1 W. B. Perry, 150 ft. from N line and center of E and W lines of lease, W. P. Perry Sur. ..... Drlg. 3,600 ft.

SMITH COUNTY

Barney Cockburn's No. 1 J. Jackson and Atterberry, 3,290 ft. from N line and 1,590 ft. from E line of survey, E. Daniels Sur. ..... Drlg. 3,605 ft.

UPSHUR COUNTY

Cranfill & Reynolds' No. 1 C. T. Crosby, 660 ft. from S and E lines of 190-ac. tract, 4,000 ft. E of Cranfill & Reynolds' No. 1 Rash, P. L. Clawer Sur. ..... Drlg. 3,701 ft.

C. H. Lyons et al's No. 1 E. H. Crosbie, 330 ft. out of SE cor. of lease and survey, C. Witcher Sur. ..... Derrick and rig up.

Manzell et al's No. 1 C. B. Mackey, 2,480 ft. from N line and 3,340 ft. from E line of survey, J. M. Pineda Sur. ..... Rig up.

VAN ZANDT COUNTY

Gray and Williams et al's No. 1 Paschall, 590 ft. from E line and 200 ft. from N line of 39-ac. tract, 5 miles NW of Jackson, D. T'Barbo Sur. ..... Set surface csg. 88 ft.

J. O. Griffin's No. 1 Bruce & Gibbard, 1,000 ft. from S line and 330 ft. from E line of 134-ac. tract, G. Martinez Sur. ..... Derrick.

Humble Oil & Refining Co.'s No. 1 J. D. Listenbee, 150 ft. out of SW cor. of W 15 acres of 30-ac. tract, John Goodman Sur. ..... Waiting on rotary tools.

Humble Oil & Refining Co.'s No. 1 S. R. Ray, 200 ft. S and 160 ft. W of J. D. Listenbee 30-ac. lease in Nacogdoches County School Lands Sur. ..... Location.

Pure Oil Co.'s No. 6 A. W. Ellison, 625 ft. N of S line and 200 ft. W of E line of A. W. Ellison 67-acre tract, James Rose Sur. ..... Location.

Ray Drilling Co.'s No. 1 J. W. Mallory, 1,150 ft. from S line and 150 ft. from W line of 217-ac. tract, John Walling Sur. ..... Derrick.

WOOD COUNTY

D. T. Cauble and Thompson's No. 1 N. G. Bobbett, 650 ft. from S line and 220 ft. from W line of tract, 2½ miles NW of Mineola, Daniel Fuller Sur. ..... T.D. 4,400 ft.

Wildcat Operations in West Texas

(Continued from Page 35)

Atlantic Oil & Prod. Co.'s No. 2 Holt, 660 ft. from N line and 1,980 ft. from E line of Sec. 19, Blk. A, P.S.L. Sur. ..... Location.

Atlantic Oil & Prod. Co.'s No. 1 Jones, 2,310 ft. from N line and 440 ft. from W line of Sec. 36, Blk. 43, Twp. 2s, T.&P. Sur. ..... Drlg. 780 ft.

Broderick & Calvert et al's No. 1 E. F. Cowden, 2,240 ft. from E line, 330 ft. from S line of Sec. 35, Blk. 44, Twp. 2s, T.&P. Sur. ..... Well shut in; T.D. 4,338 ft.

Broderick & Calvert's No. 1 Cowden, 1,980 ft. from S line and 1,980 ft. from N line of Sec. 16, Blk. 43, Twp. 2s, T.&P. Sur. ..... Bldg. derrick.

Harrison et al's No. 2 Addis, 990 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. ..... Drlg. 2,711 ft.

Harrison et al's No. 3 Addis, 1,650 ft. from N line and 2,200 ft. from W line of Sec. 35, Blk. 43, Twp. 2s, T.&P. Sur. ..... Location.

Skelly Oil Co.'s No. 1 Addis, 990 ft. from N line and 2,200 ft. from E line of Sec. 35, Blk. 43, Twp. 2s, T.&P.R.R. Sur. ..... Drlg. 1,735 ft.

Fred Turner's No. 1-B F. V. Addis, 440 ft. from the E line and 330 ft. from S line of Sec. 35, T.&P.R.R. Sur., Blk. 43, Twp. 2s ..... Drlg. 3,145 ft.

FISHER COUNTY

Condor Pet. Co.'s No. 1 Holley, 1,170 ft. W and 660 ft. from N lines of E half, Sec. 6, Blk. R, W. E. Richardson Sur. ..... Moving in material and S.D.

Cranfill & Reynold's No. 3 W. M. Flanagan, 165 ft. S of N line and 330 ft. W of E line of W half Sec. 300, Blk. 1, B.B.B.&C.Ry. Sur. ..... T.L. 3,078 ft.; drlg. 3,084 ft.

Cranfill & Reynolds' No. 3 T. Willingham, Sec. 199, Blk. 1, B.B.B.&C.Ry. Sur. ..... T.L. 3,105 ft.; swabbed 76 bbls. of oil in 2 hrs. after acid treatment; T.D. 3,130 ft.

Merry Bros. and Perini's No. 1 J. J. Steele, 330 ft. E and 150 ft. N of SW cor. NE Sec. 310, B.B.B.&C. R.R. Sur. ..... Spudded.

Mid-Continent Petroleum Corp.'s No. 2 Pardue, 672 ft. from N and 330 ft. from E line of Sec. 202, B.B.B. &C. Sur., Blk. 1 ..... Rig up.

Southern's No. 1 King, 660 ft. from N and 330 ft. from W line of SW Sec. 193, B.B.B.&C. Sur. ..... Drlg. 965 ft.

Roesser and Hill's No. 1 Hill, 661 ft. from N and 330 ft. from E line of NW of Sec. 193, B.B.B.&C. Sur., Blk. 1 ..... Spudded.
Southern Oil Co.'s No. 1-A Pardue, 2,310 ft. from S and 990 ft. from E lines of Sec. 202, B.B.B.&C. Sur. ..... T.D. 2,715 ft.
Texas Co.'s No. 3 T. A. Jean, 165 ft. N of S line and 330 ft. E of W line of E half Sec. 201, Blk. 1, B.B.B.&C.Ry. Sur. ..... T.D. 2,875 ft.
Texas-Inland Oil Co.'s No. 1 First National Bank of Hamlin, 590 ft. N and 330 ft. W of SE cor. of W half NE Sec. 191, B.B.B.&C.R.R. Sur. ..... Drlg. 825 ft.

GAINES COUNTY

R. H. Gill et al's No. 1 Crewa, 1,320 ft. from S and 1,320 ft. from W line of Sec. 9, Blk. A-20, P.S.L. Sur... Bldg. derrick.

GLASSCOCK COUNTY

Heyer-Zuzack's No. 1 Oxsheer, 1,650 ft. from N line and 1,650 ft. from W line of Sec. 8, Blk. 34, Twp. 2s, T.&P. Sur. ..... Drlg. 160 ft.
Humble Oil & Ref. Co.'s No. 3 Arrington, 330 ft. from N line and 330 ft. from E line of Sec. 21, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 1,220 ft.
Noble Drlg. Co.'s No. 2 Baker, 330 ft. from N line and 330 ft. from E line of Sec. 22, Blk. 33, Twp. 2s, T.&P. Sur. ..... Rig up standard tools.
Simms Oil Co.'s No. 2-A Coffee, 330 ft. from S line and 990 ft. from W line of Sec. 15, Blk. 33, Twp. 2s, T.&P. Sur. ..... S.D. 2,160 ft.; 900 ft. of oil in hole.
Tribal Oil Co.'s No. 5-B Edwards, 330 ft. from S line and 330 ft. from E line of Sec. 6, Blk. 33, Twp. 2s, T.&P. Sur. ..... T.D. 620 ft.

HOWARD COUNTY

Continental Oil Co.'s No. 8 Settles, 1,980 ft. from N line and 1,625 ft. from W line of Sec. 133, Blk. 29, W.&N.W. Sur. ..... T.D. 2,538 ft.; to plug back to 2,450 ft. and treat with acid.
Group No. 1 Oil Co. and Continental Oil Co., 2,640 ft. from N line and 1,980 ft. from E line of Sec. 5, T.&P.R.R. Sur., Blk. 32 ..... Drlg. 2,345 ft.
L. C. Harrison et al's No. 2 Texas Land & Mortgage Co., 2,310 ft. from E line and 330 ft. from the S line of Sec. 4, T.&P.R.R. Sur., Blk. 30, Twp. 1s ..... Location.
Plymouth Oil Co.'s No. 9 Kloh et al, 2,640 ft. from the N. line and 1,980 ft. from W line of Sec. 5, Blk. 32, T.&P.R.R. Sur., Twp. 2s ..... Straightening hole; T.D. 1,305 ft.
Schermerhorn Oil Co.'s No. 1 Kloh, Sec. 3, Blk. 33, Twp. 2s, T.&P. Sur. ..... Drlg. 2,337 ft.
Joe Rusk et al's No. 2 G. M. Dodge Estate, 330 ft. from N line and 2,310 ft. from the E line of Sec. 9, H.&T.C.R.R. Sur., Blk. 30, Twp. 2s ..... Cellar and pit.
Sinclair Prairie Oil Co.'s No. 9 Dodge, 310 ft. from N line and 1,625 ft. from W line of Sec. 11, Blk. 30, Twp. 1s, T.&P.R.R. Sur. ..... Drlg. 1,300 ft.
Southern Oil Co.'s No. 1 Denman, 2,310 ft. from N line and 330 ft. from W line of Sec. 10, Blk. 30, Twp. 1s, T.&P.R.R. Sur. ..... Drlg. 125 ft.
Ungren & Frazier's No. 1 Davis, 330 ft. from S line and 990 ft. from W line of Sec. 2, Blk. 30, Twp. 1s, T.&P. Sur. ..... Drlg. 1,535 ft.

IRION COUNTY

Williams-Short's No. 1 Gentry, 2,200 ft. from N line and 2,080 ft. from W line of Sec. 1, Blk. 3, H.&T.C. Sur... To spud.

JONES COUNTY

Dyer's No. 1 Odom, 200 ft. from S and 170 ft. from W of N 320 acres, G. Zumwalt Sur. ..... Fishing 2,300 ft.
Jack Roberts' No. 2 Swann, 2,200 ft. from N and 1,600 ft. W of SE cor. of I. Milley Sur. ..... Rig up.
Roesser & Pendleton's No. 1 W. H. Evans, 300 ft. N and 9,300 ft. E of SW cor. of E 101 acres of N 202 acres of Sec. 4, Blk. 15, T.&P.R.R. Sur. ..... Drlg. 2,080 ft.

LOVING COUNTY

R. L. Allen's No. 1 fee, 4,290 ft. from NE line, 330 ft. from SE line, Sec. 82, H.&T.C. Sur. ..... Location.
R. L. Allen's No. 2 fee, 4,290 ft. from NE line, 990 ft. from SE line, Sec. 82, Blk. 33, H.&T.C. Sur. ..... Location.
R. L. Allen's No. 3 fee, 4,290 ft. from NE line, 990 ft. from NW line, Sec. 82, Blk. 33, H.&T.C. Sur. ..... Location.
R. L. Allen's No. 4 fee, 4,290 ft. from NE line, 330 ft. from NW line, Sec. 82, Blk. 33, H.&T.C. Sur. ..... Location.
Eppenauer Drlg. Co.'s No. 1-C Allen, 330 ft. from NW line, 2,310 ft. from SW line, Sec. 90, Blk. 1, W.& NW Sur. ..... Drlg. 920 ft.
Eppenauer Drlg. Co.'s No. 1-A Victor, 330 ft. from SW and 338 ft. from SE of NW of N half Sec. 4, Blk. 2, W.&N.W. Sur. ..... Rigging up standard tools
Sinclair Prairie Oil Co.'s No. 1 Allen, 330 ft. from SE lines and 990 ft. from SW lines of Sec. 4, Blk. 2, W.&N.W. Sur. ..... Location.

PECOS COUNTY

Mac T. Anderson's No. 1 E. M. Roots Estate, 1,500 ft. from the N line and 330 ft. from W line of Sec. 11, G.C.&S.F.R.R. Sur., Blk. 118 ..... Drlg. 810 ft.
M. H. Black et al's No. 1 E. E. Powell et al, 150 ft. from NE line and 150 ft. from SE line of Sec. 102, H.&G.M.R.R. Sur., Blk. 10 ..... Drlg. 585 ft.
California Oil Co.'s No. 1 Reid, 1,087 ft. S and 493 ft. W from the NW cor. of Sec. 61, Blk. 1, I.&G.N. Sur. ..... Location.
California Oil Co.'s No. 23 Yates, 315 ft. W of No. 1 Reid, Sec. 34, Blk. 194, G.C.&S.F. Sur. ..... Location.
Culberson Bros.'s No. 15-B Monroe, 725 ft. from N line and 1,380 ft. from E line of Sec. 39, Blk. 194, G.C.&S.F.R.R. Sur. ..... Location.
Humble Oil & Refining Co.'s No. 1 White, Baker, 1,320 ft. from N and E lines of Sec. 44, Blk. Z, T.C. Sur.... Drlg. 5,734 ft.
Kemper & Kimberlin et al's No. 2 D. B. Gregg et al, 1,490 ft. from NW line and 1,470 ft. from NE line of Sec. 101, H.&G.M.R.R. Co. Sur., Blk. 10 ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 10 Smith, 150 ft. from N line and 250 ft. from E line of Sec. 31, Blk. 194, G.C.&S.F. Sur. ..... Location.
Mid-Kansas O. & G. Co.'s No. 18 Smith-Taylor, 1,395 ft. from S line, 1,390 ft. from W line, Sec. 32, G. C.&S.F. Sur., Blk. 194 ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 21 Smith-Taylor, 1,700 ft. from S line and 275 ft. W of northerly NW cor. of Fred Turner, Jr., Sur., but located in Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... Drlg. 1,381 ft.
Mid-Kansas Oil & Gas Co.'s No. 22 Smith-Taylor, 250 ft. from S line and 324 ft. from W line of NW cor. of Fred Turner, Jr., Sur. No. 1, but located in Sec. 33, Blk. 194, G.C.&S.F. Sur. ..... Fishing 1,374 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Turner, 1,212 ft. from N line and 250 ft. from W line of Turner Sur. No. 2.. Location.
Mid-Kansas Oil & Gas Co.'s No. 1 Turner, 250 ft. from N line and 250 ft. from W line of Turner Sur. No. 2.. Location.
Mid-Kansas Oil & Gas Co.'s No. 2 Turner, 729 ft. from N and 209 ft. from W line of Turner Sur. No. 4 .... Location.
Mid-Kansas Oil & Gas Co.'s No. 1-B Yates, 481 ft. from N line and 250 ft. from E line of Sec. 32, Blk. 194, G.C.&S.F. Sur. ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 36-A Yates, 250 ft. N and 324 ft. W from the NW cor. of Turner Tract No. 2 in Sec. 34½, I.G. Yates Sur. ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 37-A Yates, 250 ft. N and 321 ft. E of NW cor. of the Turner Tract No. 3 in Sec. 34½, I. G. Yates Sur. ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 38-A Yates, 350 ft. E and 205 ft. S from the NE cor. of Turner Tract No. 3 in Sec. 34½, I. G. Yates Sur. ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 39-A Yates, 150 ft. N and 250 ft. W of the NW cor. of Turner Tract No. 4 in Sec. 34½, I. G. Yates Sur. ..... Location.
Mid-Kansas Oil & Gas Co.'s No. 35-A, 350 ft. from N line and 324 ft. from E line of NW cor. of Fred Turner, Jr., Sur. No. 2, but located in I. G. Yates Sur., A-8195. ..... Drlg. 1,235 ft.
Sproles & O'Neal's (rec.) No. 2-A Fred Turner, Jr., 196 ft. from N line, 300 ft. from W line of Fred Turner, Jr., Sur. No. 1 ..... Location.
Sproles & O'Neal's (rec.) No. 4-A Fred Turner, Jr., 1,640 ft. from N line, 250 ft. from W line of Fred Turner, Jr., Sur. No. 1 ..... Fishing 1,225 ft.

REAGAN COUNTY

Big Lake Oil Co.'s No. 5-C University ..... Drill pipe stuck 8,333 ft.
Big Lake Oil Co.'s No. 13-C University, 938 ft. from N, 740 ft. from E line of Sec. 12, Blk. 2, University land ..... Prepare to deepen 8,677 ft.
Big Lake Oil Co.'s No. 14-C University, 735 ft. from S line and 2,730 ft. from E line of Sec. 25, Blk. 9, University Land Sur. ..... Drlg. 2,463 ft.
Big Lake Oil Co.'s No. 15-C University, 660 ft. from E line and 660 ft. from S line of Sec. 25, Blk. 9, University Land Sur. ..... Rig up.
Continental Oil Co.'s No. 9-B University, 1,900 ft. from S line, 1,895 ft. W of E line of Sec. 39, Blk. 9, University Land Sur. ..... T.D. 8,850 ft.; to plug.
Group Oil Co.'s No. 10-B University, 1,900 ft. from N and 1,895 ft. from E line, Sec. 36, Blk. 9 ..... Cellar.

RUNNELS COUNTY

Agnew et al's No. 1 H. B. Fowler, 150 ft. S and W of NE cor. of Sec. 23, N. Travis Sur. No. 533 ..... Drlg. 2,230 ft.
Golden Pet. Co.'s No. 2 McMillan, Subdv. 22, N. Travis Sur. ..... Drlg. 1,830 ft.
B. C. Mann et al's No. 1 H. E. Wade, 150 ft. from S and 1,650 ft. from W line, Subdv. No. 8, Norvel Travis Sur. No. 533 ..... Running csg. 2,135 ft.
Mann et al's No. 1 Wade, 330 ft. from N and 330 ft. from E of NW cor. of E 75 acres of S 305.6 acres, Blk. 10, N. Travis Sur. ..... S.D. 1,800 ft.
Dick Thomas' No. 1 Wade, 2,625 ft. from N and 2,034 ft. W of SE cor. of Lot 10, N. Travis Sur. ..... Spudded.

UPTON COUNTY

Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W, Sec. 197, Blk. F, C.C.S.D.&R.G.N.G.... Drlg. 7,828 ft.

WARD COUNTY

Abell Brothers' No. 1 Archenhold et al, 2,310 ft. from NE line and 330 ft. from SE line of Sec. 33, H.&T.C. Sur., Blk. 5 ..... Drlg. 2,600 ft.
Atlantic Oil & Prod. Co.'s No. 2 Blank-Camp, 2,310 ft. from NW line and 2,310 ft. from SW line of Sec. 14, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,245 ft.
Atlantic Oil & Prod. Co.'s No. 9 Johnson, 330 ft. from NE line and 990 ft. from NW line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... T.D. 1,491 ft.
Atlantic Oil & Prod. Co.'s No. 10 Johnson, 990 ft. from NE line and 330 ft. from NW line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Location.
Atlantic Oil & Prod. Co.'s No. 11 Johnson, 2,310 ft. from NE line and 1,650 ft. from SE line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,090 ft.
Atlantic Oil & Prod. Co.'s No. 13 Johnson, 990 ft. from SE line and 990 ft. from NE line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Location.
Atlantic Oil & Prod. Co.'s No. 13 Johnson, 330 ft. from NE line and 330 ft. from SE line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Location.
Atlantic Oil & Prod. Co.'s No. 14 Johnson, 330 ft. from NE line and 2,310 ft. from NW line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Drlg. 1,230 ft.
Atlantic Oil & Prod. Co.'s No. 15 Johnson, 330 ft. from SE line and 1,650 ft. from NE line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Location.
George Bentley et al's No. 1 C. Bergman, 330 ft. from NE line and 2,310 ft. from NW lines of Sec. 26, Blk. 5, H.&T.C. Sur. ..... T.D. 2,650 ft., plugged back to 2,470 ft., fishing.
George Bentley et al's No. 1 A. Emory, 1,830 ft. from NE line and 2,310 ft. from NW line of Sec. 24, Blk. 5, H.&T.C. Sur. ..... T.D. 2,301 ft.
California Oil Co.'s No. 1 Durgin, 990 ft. from SE line and 330 ft. from SW line of Sec. 15, Blk. 34, H.&T.C. Sur. ..... Spudding.
California Oil Co.'s No. 1 J. F. York, 330 ft. from NW line and 330 ft. from SW line of Sec. 10, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,346 ft.
Eastland Oil Co.'s No. 2 Johnson, 1,980 ft. from SE line and 1,980 ft. from SW line of Sec. 24, Blk. 34, H.&T.C. Sur. ..... Drlg. 2,420 ft.
Gulf Prod. Co.'s No. 22 Hutchings, 330 ft. from N line and 330 ft. from W line of Sec. 4, Blk. F, G.&M.M. B.&A. Sur. ..... Flowed 275 bbls. of oil Nov. 25; T.D. 2,765 ft.
Gulf Prod. Co.'s No. 23 Hutchings, 990 ft. from N line and 330 ft. from W line of Sec. 4, Blk. F, G.&M.M. B.&A. Sur. ..... Location.
Gulf Prod. Co.'s No. 24 Hutchings, 1,549 ft. from N line and 440 ft. from W line of Sec. 7, Blk. O, G.&M.M. B.&A. Sur. ..... Location.
Gulf Prod. Co.'s No. 27 O'Brien, 990 ft. from N line and 330 ft. from E line of Sec. 17, Blk. F, G.&M.M.B.&A. Sur. ..... Drlg. 2,524 ft.
Gulf Prod. Co.'s No. 36 O'Brien, 330 ft. from N line and 330 ft. from E line of Sec. 17, Blk. F, G.&M.M. B.&A. Sur. ..... T.D. 2,750 ft.; flowed 260 bbls. of oil in 8 hrs.; T.D. 2,750 ft.
Gulf Prod. Co.'s No. 38 O'Brien, 990 ft. from S line and 990 ft. from E line of Sec. 16, Blk. F, G.&M.M. B.&A. Sur. ..... Drlg. 1,245 ft.
Gulf Prod. Co.'s No. 39 O'Brien, 990 ft. from N line and 990 ft. from E line of Sec. 17, Blk. F, G.&M.M. B.&A. Sur. ..... Location.
Gulf Prod. Co.'s No. 40 O'Brien, 1,650 ft. from N line and 330 ft. from E line of Sec. 17, Blk. F, G.&M.M. B.&A. Sur. ..... Location.
Humble Oil & Ref. Co.'s No. 1 University, 990 ft. from N line and 440 ft. from E line of Sec. 2, Blk. 16, University Sur. ..... Rig up.
Recter-Plains' No. 1 Lee Monroe, 1,320 ft. from SW and 330 ft. from SE Sec. 13, J. N. Rose Sur. ..... Drlg. 4,360 ft.
Simms Oil Co.'s No. 1 Massey, 2,310 ft. from SW line and 2,310 ft. from SE line of Sec. 14, Blk. 34, H.&T.C. Sur. ..... Rigging up rotary.
Sinclair Prairie Oil Co.'s No. 8 H. Archenhold, 330 ft. from NE lines and 330 ft. from SE lines of SW of Sec. 33, H.&T.C. Sur., Blk. 5 ..... Drlg. 2,360 ft.
Sinclair Prairie Oil Co.'s No. 4 Archenhold, 2,310 ft. from NW line and 2,310 ft. from SW line of Sec. 33, Blk. 5, H.&T.C. Sur. ..... Rigging up.
W. B. Smith's No. 1 Wallis, 3,636 ft. from NE line and 157 ft. from SE line of Sec. 19, Blk. 34, H.&T.C. Sur... Location.
S. A. Thompson's No. 1 Johnson, 1,650 ft. from SW line and 2,310 ft. from SE line of Sec. 9, Blk. 34, H.&T.C. Sur. ..... Location.

WINKLER COUNTY

Magnolia Pet. Co.'s No. 1 Scarborough, 1,650 ft. from N line and 330 ft. from W line of Sec. 1, Blk. 77, P.S.L. Sur. ..... Rig.
Sinclair Prairie Oil Co.'s No. 3 W. F. Scarborough, 1,650 ft. from E line and 1,980 ft. from N line of Sec. 1, Blk. 77, P.S.L. Sur. ..... Drlg. 1,085 ft.

Oklahoma Operators Mark Time as They Await Action of Oil Administrator; Output Is Up

By JAMES McINTYRE

Waiting to see what Oil Administrator Ickes decides as to the policy to be pursued by the oil industry, Oklahoma operators slowed up their new work program, and for the past couple of weeks little new work has been started. Last week saw the completion of few important wells. There was nothing new out of the Lucien Field and the Sinclair Prairie Oil Co.'s producer in the Crescent area, reported last week, has not yet shown evidence of being in the same class as the wells east of it in the pool.

Considerable leasing is being done in Cleveland and McClain Counties, a play in which such companies as the Indian Territory Illuminating Oil Co., Gypsy Oil Co., Carter Oil Co. and Phillips Petroleum Co. are taking part as purchasers.

Production in the State in the week ending November 18, increased 24,155 bbls. per day over the week before, and 93,140 bbls. over the week ending November 4.

Production by Pools

Estimated daily average production in Oklahoma in the week ending November 18 and in the preceding week follows:

	Nov. 18	Nov. 11
Allen	9,060	9,200
Bristow-Slick	11,300	11,300
Healdton	9,950	9,950
Hewitt	5,100	5,150
Burbank	9,500	9,500
Balance of Osage	17,500	18,300
Lucien	6,030	5,260
Bowlegs	11,390	9,240
Carr City	7,360	5,070
Cromwell	4,800	4,800
Earlsboro	10,020	9,150
East Earlsboro	15,285	13,270
South Earlsboro	1,575	1,135
Little River	17,410	14,110
East Little River	930	910
Oklahoma City	205,615	193,825
Seminole	10,410	10,120
East Seminole	1,575	1,420
Searight	2,665	2,180
Maud	1,510	1,545
Mission	4,510	4,075
Cushing-Shamrock	13,500	13,500
St. Louis-Pearson	22,780	24,175
Tatums-Tussey	7,850	7,850
Sholem-Alechem	5,200	5,200
Wewoka	4,060	4,500
Other pools	105,540	103,535
Total Oklahoma	522,425	498,270

Logan County

Recent gauges of wells in the new Crescent Pool in Logan County show the Gypsy Oil Co. and Carter Oil Co.'s No. 1 Good, C SW NW Section 27-17-4w, made 2,883 bbls. in 24 hours; Continental Oil Co.'s No. 1 McConnell, C SE SE Section 28-17-4w, 3,766 bbls. in 15 hours and 5,792 bbls. in 24 hours; Sinclair Prairie Oil Co.'s No. 1 Phillips, C NE NE NW Section 28-17-4w, 435 bbls. in 17 hours and 25 minutes; 507 bbls. in 24 hours.

Sinclair Prairie Oil Co.'s No. 1 Shaffer, C NE NE SW Section 28-17-4w, set pipe at 6,388 feet, and the crew was waiting for cement to set. Mid-Continent Petroleum Corp. was drilling at 3,337 feet in No. 1 Campbell, C SE NE Section 33-17-4w. Texas Company was drilling at 3,775 feet in No. 1 Denney, C NE SE Section 33-17-4w. Gypsy Oil Co. and Carter Oil Co. had rig up for No. 1 Knowles, C NW NW Section 34-17-4w.

Greater Seminole District

Atlantic Oil Producing Co.'s No. 1 School Land, C NE NW NW Section 36-10-4e, Pottawatomie County, found Viola lime at 4,390 feet and set 7-inch pipe at 4,392 feet and was rigging up standard tools to complete. It is a wildcat.

Wells and others' No. 2 Stephenson, NE NW SE Section 14-10-11, Okfuskee County, flowed 210 bbls. in 24 hours along with 7,000,000 feet of gas from sand at 1,995-98 feet and have cellar dug for No. 4 Micco, SE SW NE Section 14-10-11.

Tillman & Hill have abandoned the location after digging cellar for No. 1 Thomas, SW cor. NE Section 11-9-6, Seminole County.

Atlantic Oil Producing Co.'s No. 1 Davis, SW NE SE Section 13-8-6, Bowlegs district, had Wilcox sand at 4,142-50 feet. It swabbed 60 bbls. and will be deepened.

Lyon & Todd's No. 1 Kiker, in Block 146, Wewoka townsite, NE Section 30-8-8, was completed after it swabbed 300 bbls. in 24 hours from Cromwell sand at 3,214-48 feet.

Vivian Oil Co.'s No. 1-A Kanster, SE SE SW Section 18-7-4, South St. Louis area, was acidized with 2,000 gallons. It swabbed and flowed 245 bbls. in 17 hours. It had been plugged back to 3,986 feet. Moebris Oil Co.'s No. 1 Sullivan, SE SW SW Section 27-7-4, which had a hole full of water at 4,370 feet, was given a water shutoff and swabbed 200 bbls. of oil, cut 6 per cent, in 24 hours. Thirty-six hundred feet of tubing was dropped in the hole and had not been recovered when this report was filed.

Helmerich & Payne's No. 1 Billington, SE SE SW Section 31-7-5, swabbed 70 bbls. in 24 hours and was to be acidized. Eight-inch pipe was set at 3,975 feet and the pay is at 4,082-97 feet.

Superior Oil Co. has a failure in No. 1 Wood, SE NE SW Section 31-7-5. Wilcox sand at 4,353-58 feet yielded only water and the hole was abandoned.

Manahan and others' No. 3 Chapman, CEL W half SE SW Section 10-7-8, West Holdenville Field, had Booch sand at 2,890-2,934 feet. The well flowed 728 bbls. of oil and 4,000,000 feet of gas in 24 hours.

Sunray Oil Co.'s No. 3 Jacobs, NE NE NW NW Section 15-7-8, swabbed 52 bbls. from Booch sand at 2,893 feet, total depth 2,952 feet. It will be tested on the pump.

Burke-Greis Oil Co.'s No. 1-A Scroggins, NW SW SE Section 20-7-8, was dry and abandoned at 2,931 in shale. There was a small showing of oil in Booch sand at 2,890-2,907 feet.

Jarvis & Holm's No. 3 Fish (twin), NE NW NE Section 30-7-8, in the Fish Pool, was given an acid treatment and flowed 1,111 bbls. of oil in 24 hours from Dolomite topped at 4,093 feet. Wilcox sand at 4,144-51 feet, showed only water and the hole was plugged back to 4,134 feet.

In the Sasakwa townsite pool, Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Landowners, SE cor. Section 26-6-7, Seminole County, flowed 437 bbls. in 11 hours from Wilcox sand at 4,025-50 feet. Viola lime at 3,888-3,916 feet also showed oil.

New work started in the past week included the following operations: R. H. Pierce & Co.'s No. 3 Phillips, NE SW SE Section 8-9-6, cellar; Amerada Petroleum Corp.'s No. 5 Harrison, SE NW SW Section 33-7-4, drilling at 700 feet; Vaughn and others' No. 2 Lowther, NE SW Section 33-7-4, rig on the ground, and No. 3 Lowther, SW NE SW Section 33, a location; Harmon Oil Co.'s No. 1 Westmoreland, SW SE SW Section 11-7-8, machine; Gypsy Oil Co. and others' No. 1 Quis, CSL N half NW Section 25-6-4, drilling at 125 feet; Amerada Petroleum Corp.'s No. 1 Zoller, NE SW Section 5-6-5, spudded.

Pontotoc County

The Loke Oil Co.'s No. 3 Barker, C NW NE SE Section 25-5-4, Pontotoc County, was drilled to 2,613 feet. Viola lime was found at 2,375 feet and pay at 2,437-55 feet and 2,462-75 feet. It swabbed 220 bbls. of oil and 280 bbls. of water and was plugged back to 2,606 feet to shut off the water.

The Navajo Oil Co.'s wildcat, No. 1 Miller, NW NE Section 13-1n-6w, Stephens County, was drilling at 3,840 feet. It cored shale and lime at 3,488-98 feet and there was a small showing of oil in the 8 feet of core recovered.

Atoka County

Blake and others abandoned No. 1 Galbreath, SW NE SE Section 5-1n-15e, Atoka County, at 218 feet, and No. 1 Sanders, NE SW SE NE Section 5-1n-15e, at a depth of 45 feet. George and others abandoned No. 1 Lowman, NW cor. SW Section 9-1n-15e, at a depth of 50 feet.

Oklahoma City Field

In the Oklahoma City Field Westgate Oil Co.'s No. 4 Carey, 1,005 feet south and 340 feet east of C Section 34-12-

Wildcat Operations in Oklahoma

Week Ending November 18

Northern Oklahoma

ALFALFA COUNTY

Company, farm and location—	Remarks:
Acre et al's No. 1 Acre, C SW NE Sec. 14-24-11w	T.D. 6,255 ft.; flowed and swbd. 70 bbls.; fishing.

BECKHAM COUNTY

Mid-Texas' No. 1 Sidell, SE SW SW Sec. 17-9-22w	Drlg. 3,145 ft.
Pattee Royalty Co.'s No. 1 Goose Tree, SW SE SW SE Sec. 32-10-23w	T.D. 3,965 ft.
West Oak Gas Co. et al's No. 1 Eason, C NE Sec. 11-9-25w	Rigging up rotary.

COAL COUNTY

Funk & Russell's No. 1 Miller, SE NE Sec. 10-2-8	S.D. 2,750 ft.

COMANCHE COUNTY

Stores et al's No. 1 Crutcher, C NE Sec. 11-1n-12w	Set 10-in. pipe 18 ft.

GARFIELD COUNTY

J. H. Lewis' No. Clark, C NW NW Sec. 34-21-6w	Oswego at 5,730 ft.; drlg. 5,900 ft.

GREER COUNTY

Otis Cosgrove's No. 1 Border, C S½ NE NW Sec. 31-6-22w	S.D. 160 ft.

HUGHES COUNTY

Dixie Lee Oil Co.'s No. 1 Taylor, C NW Sec. 32-5-10	S.D. 350 ft.
Scruggs et al's No. 1 Black, NE Sec. 13-9-10	Running 10-in. pipe; T.D. 1,772 ft.

KAY COUNTY

Morgan et al's No. 1 Bush, NW NE NE Sec. 25-28-4	Drlg. 3,105 ft.
Burton Lewright et al's No. 1 Leseman, SW NE SE Sec. 4-28-2	Rig.

KIOWA COUNTY

Christian's No. 1 James, NE NW Sec. 8-7-18w	T.D. 1,904 ft.; fishing.

LINCOLN COUNTY

Amerada Pet. and Stanolind O. & G. Co.'s No. 1 Martinek, NW SE Sec. 35-13-5e	D.P. stuck; T.D. 3,798 ft.
Huckleberry et al's No. 1 Boland, SW cor. Sec. 25-12-3e	Spudding.

LOGAN COUNTY

Jadeka Dev. Co.'s No. 1 Frakes, C SW NE SW Sec. 16-15-6w	Rigging up.

MARSHALL COUNTY

Robb et al's No. 1 Vittitoe, NE SE Sec. 11-5s-4e	S.D. 3,315 ft. for fuel.

MURRAY COUNTY

A. E. Harden's No. 1 Sadler, NE Sec. 19-1-2	Rig.
T. E. Revells et al's No. 1 Wolfe, NE cor. Sec. 18-1-3	Running 8-in. pipe; T.D. 1,500 ft.

MUSKOGEE COUNTY

J. S. Routt et al's No. 1 Escoe, CWL SE NE Sec. 17-13-17	T.D. 1,200 ft.; S.D. for 10-in. csg.

OKLAHOMA COUNTY

Springrose Drlg. Co.'s No. 1 Edwards, C SE SE Sec. 19-11-1	Drlg. 4,815 ft.
H. E. Rapp's No. 1 Price, CEL NE SW Sec. 19-14-3w	T.D. 6,708 ft.; acidized; flowed 97 bbls. fluid.
F. Russell's No. 1 Heapley, SW NW NE Sec. 23-12-3w	Wilcox sand 6,649-59 ft.; flowed 262 bbls. in 24 hrs.

PITTSBURG COUNTY

Haley et al's No. 1 Walkerson, NW cor. Sec. 9-2-16	S.D. 678 ft.
Moffett & Hall's No. 1 Jones, C NE NW Sec. 14-8-14	Lost tools; T.D. 3,200 ft.; S.D.

PONTOTOC COUNTY

Galbreath's No. 1 Stafford, NE SE SE Sec. 31-2-6	Drlg. 1,345 ft.
Choctaw O. & G. Co.'s No. 1 Thompson, SW NE SW Sec. 1-1-7	S.D. 1,680 ft.
W. E. McGraw's No. 1 Mayhue, NE Sec. 19-2-6	Gilcrease sand 1,638-40 ft.; will set 5-in. pipe.
McGee et al's No. 1 Newborn, SW NE Sec. 31-5-4	Rig.
Williams' No. 1 Kroth, NE SE Sec. 33-3-4	H.F.W. 1,977 ft.
Wirrick's No. 1 fee, SE SW Sec. 29-2-7	Acidized; flowed 550 bbls. in 24 hrs.; S.D. for tankage.

POTTAWATOMIE COUNTY

Atlantic Oil Prod. Co.'s No. 1 School land, C NE NW NW Sec. 36-10-4	T.D. 4,402 ft.; R.U.S.T.
Conley Drlg. Co.'s No. 1 Vinson, NE cor. Sec. 13-7-4e	S.D. 2,794 ft.
Payne Drlg. Co.'s No. 1 Lovelace, NW SW NW Sec. 27-6-4	T.D. 3,780 ft.; csg. collapsed.
Vivian Oil Co.'s No. 1 Kanster, SE SW Sec. 18-7-4	Set 6-in. pipe 3,926 ft.; W.O.C.S.

SEMINOLE COUNTY

Stewart & Egan's No. 1 Sanderson, NE SW Sec. 27-6-5	H.F.W. 3,740 ft.; P.B. to 3,724 ft.
Flemlee et al's No. 1 Bowlegs, SE NE SW Sec. 1-7-7	U.R. 10-in. pipe, 963 ft.

WASHITA COUNTY

McWhirter & Bost's No. 1 Hall, SW SE SE Sec. 28-8-19w	T.D. 2,155 ft.; lost sand pump.

Southern Oklahoma

ATOKA COUNTY

J. D. Boukan's No. 1 Howard, NW SW NW Sec. 20-2s-10e	Drlg. 865 ft.
Brookshire et al's No. 1 Rowland, NW NE NE Sec. 18-3s-10e	T.D. 3,425 ft. in lime; repairing rig.

JEFFERSON COUNTY

Wakefield's No. 1 Kelly, NW SE Sec. 1-5s-8w	S.D. 550 ft.

STEPHENS COUNTY

J. W. Madison's No. 1 Tussey, SW SE NW Sec. 24-1n-4w	Drlg. 2,275 ft.; gas sand at 2,200-05 ft.
Navajo Oil Co.'s No. 1 Miller, NW cor. NE Sec. 13-1n-6w	Drlg. 3,840 ft.
Lloyd Oil Co.'s No. 1 McKimmons, SW cor. Sec. 15-1n-4w	Set 10-in. pipe at 20 ft.
R. T. Poland et al's No. 1 Green, C NE NW NW Sec. 8-1s-4w	Drlg. 1,530 ft.

TILLMAN COUNTY

J. H. Everett's No. 1 Crane, SW cor. Sec. 15-3s-14w	Rig.

MAJOR COUNTY

Paul R. Robb's No. 1 Vittitoe, C NE SE Sec. 11-5-4	T.D. 3,500 ft.; will deepen.

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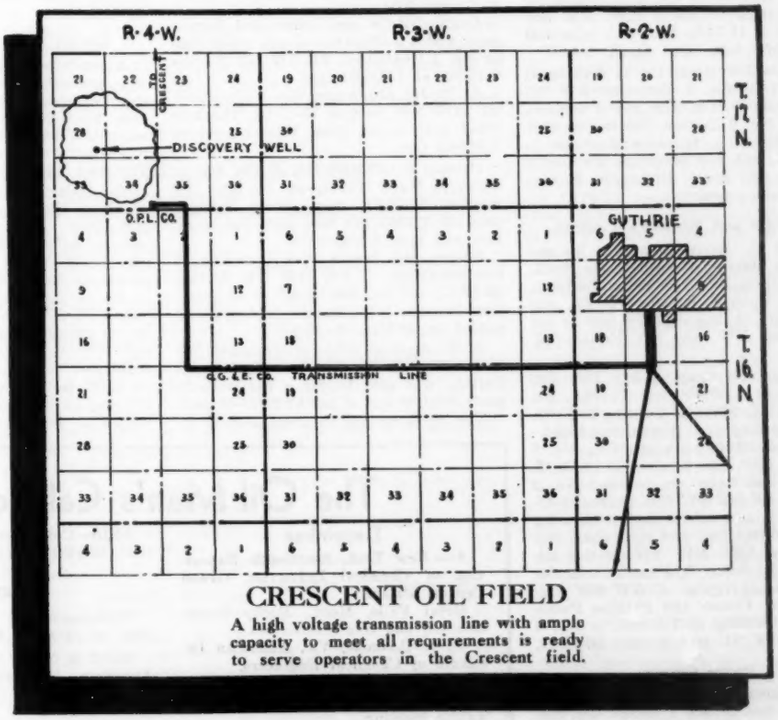

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OKLAHOMA GAS AND ELECTRIC COMPANY

Commercial Department

OKLAHOMA CITY, OKLAHOMA

3w, had Wilcox sand at 6,366 feet and drilled to 6,523 feet. It flowed 1,537 bbls. in three hours and five minutes, with gas at the rate of 30,000,000 feet per day. Later it flowed 690 bbls. in one hour. It was shut in.

Harrell-Davis' No. 1 Jeff Davis, 715 feet south and 110 feet west of C Section 22-11-3w, flowed 817 bbls. in four hours, open flow, with 40,000,000 feet of gas in a potential test.

Springrose Drilling Co.'s No. 1 Edwards, C SE SE Section 19-11-1e, a wildcat testing the Newalla structure in the eastern part of the county, was drilling at 4,815 feet. This test had Tonkawa sand at 3,925 feet; sandy shale at 4,291-4,308 feet, and Oklahoma City checkerboard lime at 4,665 feet.

Lincoln County

Phillips Petroleum Co.'s No. 1 Rowley, C SE SE Section 2-14-3, West Chandler area, Lincoln County, had Wilcox sand at 5,028 feet and drilled to 5,037 feet. Oil rose in the hole 175 feet and there was some water. A bailing test resulted in half a bailer per hour of oil and a similar quantity of water. The well will be deepened. This test had Oswego lime at 3,980 feet; Prue sand at 4,090 feet with a small showing of oil; Mayes lime at 4,530 feet; Mississippi lime at 4,613 feet; Woodford shale at 4,730 feet; Hunton lime at 4,793 feet, with a showing of oil at 4,883-4,944 feet; Viola lime at 4,950 feet. Nine-inch pipe was set at 4,975 feet. In the same township Amerada Petroleum Corp. and Stanolind Oil & Gas Co. were rigging up standard tools to complete No. 1 Brill, C NW NW NE Section 11. Eight-inch casing was set at 4,917 feet. Total depth is 4,925 feet, and Magnolia Petroleum Co. was rigging up standard tools on No. 1 Rice, NW SW NE Section 11-14-3. Nine-inch pipe was set at 4,950 feet, total depth.

Magnolia Petroleum Co. is drilling at 1,975 feet in No. 1 Benedict, SW SE NW Section 7-14-4, and has a location made for No. 3 Telford, SE cor. Section 7-14-4. The Slick Estate and others in Section 7 and the Magnolia Petroleum Co. with two wells drilling in Section 18 are making progress.

Okmulgee and Muskogee Counties

Richard C. Jones announces he and others are starting a well on the Stella Anderson farm, SW NE Section 34-16-13, Okmulgee County. Papoose Oil Co. and Stekoll were drilling at 1,000 feet in No. 2 Hawkins, NW cor. SW Section 15-15-13.

Oklahoma Oil Corp. had a hole full of water at 1,750-68 feet in No. 1-A Jackson, CEL SW NE Section 35-15-14, an old well deepened. It was abandoned.

Rose and others were spudding No. 3 Jefferson, NW cor. Section 33-16-15. J. M. Foltz was rigged up to start No. 2 Patterson, SE NE SW NW Section 8-15-18. Godfrey and others had a showing of gas at 1,042 feet and shut down No. 1-A Harrod, CSL NW NW Section 24-15-17. H. L. Jolley had machine in for No. 12 Mackey (twin), C NW SW Section 9-15-18. Colton and Phillips Petroleum were drilling at 700 feet in No. 4 Huckaby, NE SE SW Section 30-14-12.

Payne County

Mid-Continent Petroleum Corp. was drilling at 500 feet in No. 1 Swank, SE NE NE Section 19-19-2e, Payne County. L. G. Hulse was drilling below 560 feet in No. 1 Sloan, SW NW SE Section 19-17-3e, a 1,300-foot gas test. Kemp and Nunally were drilling at 850 feet in No. 1 Lingren, NW cor. SW Section 25-17-6.

Tulsa and Wagoner Counties

Edwards and Leidecker's No. 2 Trotter, SW SE Section 15-18-15, Coweta district, was shot in sand at 981-93 feet and started off at 35 bbls. per day.

Sands Petroleum Co.'s No. 4 Robin, SW cor. Section 23-18-15, is a 15-bbl. well at 1,017-40 feet, after a shot.

Helvie and Stout completed a dry hole in No. 5 Derrisaw, CWL NE NW SE Section 24-18-15, at 1,010 feet.

Dunbar and others' No. 2 Lovett, SE NE SE Section 35-18-15, was dry and abandoned at 1,710 feet in Siliceous lime.

Greer and others' No. 1 T. Tiger, C SW NW Section 11-17-15, had sand at 1,186-91 feet which was dry. It was abandoned at 1,200 feet.

Dunbar and others' No. 2 Grayson, SE NW NE SW Section 22-18-15, was drilling at 960 feet. Sands Petroleum Corp.'s No. 1 Norfer, C SW NW NE Section 23-18-15, was a location.

Creek County

In the Layton sand, Olive Pool, in Creek County, F. O. Akin and others' No. 6 Wilson, SW NW SE Section 34-18-8, was shot at 1,279-1,306 feet and made a 100-bbl. showing. It was being cleaned out. No. 7, on the same lease, SE SW NE Section 34-18-8, was given a shot at 1,256-85 feet and made 200 bbls. the first day.

Bay State Oil Co. completed a 175-bbl. initial producer in No. 2 Crabtree, SE NE SW Section 34-18-8. Sand at 1,308-51 feet was shot.

Kilgore and others' No. 2 Tiger, NW SW NE Section 34-18-8, was completed. It flowed 185 bbls. in 24 hours from sand at 1,270-97 feet, which was shot.

Todd and Willoughby's No. 2, SE cor. SW Section 34-18-8, swabbed and flowed 140 bbls. in 24 hours and was completed. It was producing from sand at 1,278-1,310 feet, which had been shot.

Wasson and McNamara's No. 1 Posey, SE SW SW Section 22-18-9, had 2,000,000 feet of gas at 2,290-95 feet and was being cleaned out.

Williams and Eamons' No. 1 Taylor, SE NW NW Section 2-17-8, was drilling at 2,855 feet with the hole full of water. Bartlesville sand was found at 2,738 feet. The water came from a formation at 2,770-2,838 feet.

Curtis Oil Co. and others had Layton sand and a 1,500,000-foot gas production in No. 1 Unallotted, SE SW NE Section 4-17-10, at 1,150-64 feet.

A. B. Ice abandoned No. 1 Crawford, SE NW NW Section 15-17-10. The hole filled with water from Wilcox sand at 3,024-43 feet.

Crosbie & Gillespie had a hole full of water in No. 2 Thompson, SE NW NE Section 36-17-11, from lower Dutcher sand at 2,196-2,220 feet and the operation was shut down.

Sherry and Murta shot their No. 4 Grayson-Cruel, C NW SW NE Section 36-17-11, in Dutcher sand at 2,207-28 feet. It made 100 bbls. the first day and settled to 60 bbls. per day.

S. W. Anthony's No. 6 Muskogee, SE SW NW NE Section 9-16-12, Mounds district, was shut in for a gas well. It made 500,000 feet of gas at 1,937-46 feet.

New work started in Creek County in the course of the week in review was as follows: National Refining Co.'s No. 12 Oglesby, NW SW SW NE Section 1-19-9, drilling at 150 feet; Wood Oil Co.'s No. 1 Pitts, NE cor. SW Section 3-18-8, drilling at 350 feet; Samples & Mann's No. 1 Matoy, NW NE SW Section 14-18-8, drilling at 780 feet; W. A. Moore and others' No. 1 Swingle, NW SE NE Section 16-18-8, drilling at 820 feet; McEwen & Ice's No. 1 Elle, SE NE SE Section 33-18-8, spudding; Jones & Doss' No. 3 Tiger, CEL NW NE Section 34-18-8, rigging up; same firm's No. 5 Tiger, NE NW NE Section 34-18-8, rigging up; Sinclair Prairie Oil Co.'s No. 41 Litchfield, C NE NW Section 21-17-7, building rig; Cap Rock Oil Co.'s No. 1 Kelso, SW SE SE Section 17-17-10, rigging up.

Northwestern Tests

Argo Oil & Gas Co.'s No. 1-A Stone, NW SE NE Section 30-25-1w, Kay County, was drilled to 4,305 feet and was flowing 125 bbls. a day. It was reported in last week's review as flowing and swabbing 120 bbls. per day at 4,270 feet. The production is coming from 4,243-47 feet and 4,251-55 feet.

Acre and others' No. 1 Acre, C SW NE Section 14-24-11w, in Alfalfa County, was at a total depth of 6,255 feet. It had made several small flows of oil and had swabbed 70 bbls. a day. This test had Oswego lime at 5,810 feet, a show of oil and gas at 5,910-17 feet, and topped limestone at 6,035 feet. The crew was fishing for tools.

J. H. Lewis and others' wildcat test, No. 1 Clark, C NW NW Section 31-21-6w, Garfield County, topped Oswego lime at 5,730 feet and was drilling at 5,900 feet.

Lucien Pool Near Completions

A number of wells in the Lucien Pool were near completion. Lucien Consolidated's No. 2 Wolfe, C NW NW Section 17-20-2w, found the first Wilcox sand at 5,152 feet and the first oil at 5,138 feet and had drilled to 5,190 feet. The crew had a fishing job.

The Lucien Consolidated had 3,000 feet of oil in the hole in No. 1 Webber, C NW NW Section 20-20-2w. First oil showed at 5,092-94 feet, and dolomite was being drilled at 5,153 feet. Same operators' No. 2 Webber had 4,000 feet of oil in the hole and was drilling in. This well is in the C NE NW Section 20. It found the top of the sand at 5,053 feet and was drilling in sand at 5,094 feet. Same operators were drilling at 4,921 feet in No. 1 Moelling, C SW SE Section 17-20-2w. Oswego lime was topped at 4,660 feet. Carter Oil Co. has made a location for No. 1 Webber, C NE SW Section 20-20-2w. Minnehoma Oil Co.'s No. 1 Schonwald, 440 feet south and 990 feet west of C Section 20-20-2w, was drilling cement. Seven-inch pipe was set at 5,066 feet. Layton sand was topped at 4,030 feet; Oswego at 4,665 feet, and Viola at 5,045 feet. Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 D. Shonwald, C SE SE Section 20-20-2w, was being rigged up.

Osage County

Phillips Petroleum Co.'s No. 1, C SW SW NW Section 11-24-6, found Mississippi lime at 2,824 feet and drilled to 2,905 feet, where there was a showing of gas and water. The crew was plugging back to 2,885 feet to straighten the hole.

Continental Oil Co.'s No. 2, NE cor. SE Section 21-24-7, was shot in sand at 2,592-2,634 feet and flowed and swabbed 45 bbls. in 24 hours.

The Bay Oil Co. acidized its No. 1, NW NE Section 13-23-7, which had Siliceous lime at 2,853-82 feet with a showing of oil. It found salt water at 2,882 feet and plugged back to 2,871 feet.

H. H. Markey got an estimated 200-bbl. well in No. 14, SE NE SW SE Section 25-23-8, from Oswego lime at 1,711-22 feet. It was shut in for tankage.

New work started in the past week includes Producers & Refiners Corp.'s No. 3, NW cor. Section 15-24-7, spudding; same company's No. 4, SW NW NW Section 15-24-7, rig on the ground; same company and Peters Petroleum Corp.'s No. 5, CSL SW NE NE Section 24-24-7, a location; Skelly Oil Co.'s No. 1, NE cor. NW Section 28-27-4, rig; Continental Oil Co.'s No. 5, SE cor. SW Section 15-24-8, location; E. O. Platter's No. 12, CSL NW SW NE Section 30-22-9, drilling at 250 feet; Gray Tolson's No. 3, CEL SW SE SW Section 27-21-9, spudding.

Southern Oklahoma

James Peacock's No. 1 McDuffee, NE SE SW Section 3-7s-6e, Marshall County, was completed. It was a 6-bbl. well at 798-805 feet.

Harry Ables' No. 9 Davidson-Sullivan, CEL SW NW NW Section 30-5s-6e, Marshall County, started at 22 bbls. per day from sand at 611-32 feet.

Duncan and Wichita Falls Pipe Line Co. drilled No. 11 Nigh, NE NE SE NW Section 34-1s-8w, Stephens County, from the old total depth of 1,975 feet, to 2,150 feet and got a hole full of water. It was abandoned.

Carter Oil Co.'s No. 1 Iva Briden thal, C NW SW SW Section 3-1s-3w, Carter County, was completed. It made a potential production test and yielded 395 bbls. in 24 hours. It is estimated that it can make 300 bbls. per day on the pump.

Farlyn Oil Co.'s No. 14 Seay, 645 feet south and 986 feet east of C Section 3-7s-5w, Jefferson County, was drilling at 250 feet. Bridwell Oil Co.'s No. 1 W. D. Seay, NE NE NW SW Section 10-7s-5w, was drilling at 765 feet. C. H. Choffield had a machine in for No. 2 Little, SW SE SE NE Section 25-7s-5e, Marshall County. Kingston Oil & Gas Co. had machine in for No. 5 Adams-D, SW NE SE SW Section 31-7s-6e. McHenry and others moved in a machine for No. 1 Herrell, NE cor. SW Section 20-4s-2w, Carter County. Macmo Oil Co.'s No. 1 Boles, C SW SE SE Section 27-2s-7w, was drilling at 112 feet. George Pace and others' No. 3 (twin), SW NW NW NE Section 28-2s-7w, Stephens County, was drilling at 100 feet. Carter Oil Co. made a location for No. 1 Krieger, C SW NW SE Section 8-2s-2w, Carter County. Duncan and Wichita Falls Pipe Line Co.'s No. 12 Nigh, NE NE SE NW Section 34-1s-8w, Stephens County, was drilling at 100 feet. Samedan Oil Co. was drilling at 1,300 feet in No. 3 Curtis-Gorman, SE NW NE Section 25-1s-3w, Carter County. Samedan Oil Co. had rotary rigged up for No. 4 Traham, C SW SE NW Section 31-1s-2w, Carter County.

The Oil Man's Calendar

December

4—New York, fourteenth Exposition of Chemical Industries, Grand Central Palace.

Great Falls, Mont., Rocky Mountain Oil and Gas Association.

6-7-8—Roanoke, Va., American Institute of Chemical Engineers.

New York, American Society of Mechanical Engineers, National Aeronautic Meeting.

1934

January

6-13—New York, National Automobile Chamber of Commerce.

8-9—Fargo, N. Dak., Northwest Petroleum Association, North Dakota Division, Waldorf Hotel.

18—Oklahoma City, Okla., Okla-Petroleum Marketers Association.

25-26—Sioux Falls, S. Dak., South Dakota Independent Oil Dealers Association.

27-Feb. 3—Chicago, National Automobile Chamber of Commerce.

February

6-7—Des Moines, Iowa, Iowa Petroleum Association.

13-15—Columbus, Ohio, Ohio Petroleum Marketers Association.

March

Washington, D. C., American Society of Testing Materials.

Third or fourth week, Dallas, Tex., American Association of Petroleum Geologists.

April

19-20—Cleveland, Ohio, National Petroleum Association.

May

3-4-5—Kansas City, Mo., twelfth Midwest regional meeting of American Chemical Society.

15-16-17—Tulsa, Natural Gasoline Association of America.

21—Pittsburgh, Pa., midyear meeting, A.P.I. divisions, William Penn Hotel.

November

12-15—Dallas, Tex., annual meeting, A.P.I.

Kansas Crude Oil Buyers Indicate They Can Use 139,253 Barrels Daily in January-February

By JAMES McINTYRE

Another quiet week in the Kansas fields must be recorded as reports from the many oil counties in the State show very few new operations started and mostly routine wells completed. Production took an upturn after two weeks in which the crude oil output was considerably below the State's allowable.

The allowable production of Kansas is 116,000 bbls. per day, but there is a fear among Kansas oil men that the oil administration in making its allocations based on the next change in allowables will lower Kansas' allotment. If this proves true there will be a vigorous protest and Messrs. Hoch and Blencoe of the Corporation Commission are scheduled to go to Washington to try to prevent any such production cut.

The November allowables for some of the largest pools in the State are: Ritz, 331,119 bbls.; Hollow, 205,870 bbls.; Raymond, 111,293 bbls.; Chase townsite, 86,636 bbls.; Nikkell, 52,772 bbls. The figures represent 30 days' production.

Kansas oil purchasers have indicated that their January and February requirements will total 139,253 bbls. of crude oil per day, which is far in excess of the allowable.

Reno County

Olson Drilling Co. and Skelly Oil Co.'s wildcat, No. 1 Emery, C SW NW Section 22-25-6w, Reno County, set 6-inch pipe at 3,699 feet, got the base of the Mississippi lime at 3,712 feet and were drilling at 3,846 feet. Regina Oil & Gas Co. and others' wildcat, No. 1 Wilson, NW cor. NE Section 26-25-5w, Reno County, was drilling at 4,160 feet. It had chat at 3,617 feet; set 8-inch pipe at 3,623 feet; had a hole full of water at 3,650-54 feet; set 6-inch at 3,817 feet; got the base of the Mississippi lime at 3,854 feet; Viola topped at 4,059 feet and Wilcox sand and a hole full of water was found at 4,065-4,113 feet. Roth & Faurot and others' No. 1 Yoder, a wildcat, was running 8-inch casing, total depth 3,426 feet. Lansing lime was topped at 2,732 feet, chat at 3,419 feet to total depth.

Gypsy Oil Co.'s No. 2 Krehbiel, C SE NE Section 35-23-4w, Reno County, flowed 292 bbls. in 14 hours at a total depth 3,370 feet.

Hollow and others' No. 1 Bartel, SW SE Section 36-22-4w, Reno County, was completed after it had produced 264 bbls. in 24 hours on a potential test.

Harvey County

Sinclair Prairie Oil Co.'s No. 1 H. Schroeder, NW NE Section 4-22-3w, Hollow Pool, Harvey County, made 860 bbls. in 24 hours on the pump in a potential test. Empire Oil & Refining Co.'s No. 1 Froese, SE cor. Section 7-22-3w, pumped 847 bbls. in 24 hours on a similar test.

Shell Petroleum Corp. reacidized its No. 2 Nikkell, NE SW SW Section 8-22-3w, and swabbed 460 bbls. in 16 hours, the oil coming from Hunton lime at 3,430-65 feet.

Shell Petroleum Corp.'s No. 3 Schmidt, CWL SW Section 17-22-3w, which had been acidized in chat swabbed 432 bbls., 20 per cent sediment and water in 24 hours. Potential test is yet to be taken.

Gypsy Oil Co.'s No. 1 Friesen, NE NW NE Section 18-22-3w, was a hole of water in Wilcox sand at 3,813-20 feet and was abandoned.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 4 Froese, NW cor. Section 20-22-3w, took a potential test and made 797 bbls. in 24 hours on the pump. It is a Hunton lime well.

Magnolia Petroleum Co.'s No. 3 Schmidt, NW NE Section 30-22-3w, had not taken a potential test, but swabbed 490 bbls. in 12 hours from Wilcox sand.

The Texas Co. has started drilling No. 1 Schroeder, NW SW NE Section 4-22-3w, and had set 12-inch pipe at 308 feet. Magnolia Petroleum Co. had rig up for No. 4 Schmidt, SW NW NE Section 30-22-3w.

McPherson County

Marileen Oil & Gas Co.'s No. 4 Munn, SW SE SW Section 6-20-1w, pumped 40 bbls. of oil and 40 bbls. of water in 10 hours, total depth 2,983 feet.

Regina Oil & Gas Co.'s No. 1 Vogts, C SE SE Section 8-20-1w, a wildcat, after an acid treatment in Viola lime at 3,390-98 feet, pumped 824 bbls. of fluid in 24 hours. The proportion of water was not learned.

Mid-Kansas Oil & Gas Co.'s No. 1 Chindberg, NW NE SE Section 13-19-3w, set 6-inch pipe at 3,008 feet and drilled to 3,029 feet. The well flowed 35 bbls. per hour.

McPherson Oil & Gas Co.'s No. 1 Lindberg, C NE Section 15-19-2w, an old well deepened from 2,952 to 2,966 feet, responded with a flow estimated at 240 bbls. in 24 hours. It was completed.

Wakefield and the Shell Petroleum Corp.'s No. 2 Koehn, NE SE NW Section 36-19-2w, after a 1,000-gallon acid treatment in Viola lime at 3,389-3,404 feet pumped 224 bbls. in 24 hours.

McBride, Inc. made a location for No. 3 Koehn, NE NW Section 33-21-3w. Harris and Haun and Phillips Petroleum Co. have a rig up for No. 1 Rupp, SW cor. Section 12-21-3w. Phillips Petroleum Co. has ponds dug for No. 3 Wiles, NE cor. Section 25-19-2w. Phillips Petroleum Co. was drilling at 625 feet in No. 1 Grattan, SW SE SE Section 19-19-1w. Darby Petroleum Corp. has made location for No. 2 Doane, SW cor. NW Section 28-19-1w, and Gleason and others have cellar dug for No. 1-B Hamilton, NW SW SW Section 28-19-1w.

Rice and Barton Counties

Stanolind Oil & Gas Co.'s No. 1 L. Hauser, C NE NW Section 16-20-11w, Barton County, got Siliceous lime at 3,280-99 feet, and the well pumped 18 bbls. per hour.

Mid-Kansas Oil & Gas Co.'s No. 1 Proffitt, NW cor. Section 5-20-9w, Rice County, was given a potential test and pumped 1,090 bbls. in 24 hours from Siliceous lime at 3,213-22 feet.

Gypsy Oil Co.'s No. 1 Malone, SW SE NW Section 18-20-9, had Siliceous lime at 3,305-15 feet and a hole full of oil. It had not been tested.

National Refining Co. and Barnsdall Oil Co.'s No. 1 Reese, NE SW SW Section 16-19-9w, pumped 131 bbls. of oil and 26 bbls. of water from Siliceous lime, total depth 3,256 feet.

Gypsy Oil Co. was spudding No. 1 Christopher, NE cor. Section 6-20-9w. Lario Oil & Gas Co. was rigging up standard tools for No. 1 McFarland, SE NE SW Section 7-20-9w. Werbros Development Co. and Empire Oil & Refining Co. made a location for No. 2 Mosemore, SE NW NW Section 18-20-9w.

Lario Oil & Gas Co. has made a location for a test, No. 1 Habiger, SE NE NW Section 27-18-10w, Rice County.

Slick, Pryor & Lockhart's No. 2 Herzog, NW NE SE Section 27-18-10w, is a hole full of oil from Siliceous lime topped at 3,213 feet and drilled in 1 foot.

Aylward and others' No. 7 Stratman, NW SW SE Section 1-17-10w, was completed. It made 400 bbls. in 24 hours with some salt water from Siliceous lime at 3,246-63 feet.

Butler and Greenwood Counties

Darby Petroleum Co. and Lauck have made a location for a test, No. 1 Lauck, SE SW SE Section 17-27-3, Butler County.

Beska, Baker and others' No. 1 Ballinger, SW NE Section 24-25-11, Greenwood County, was a hole full of water in Mississippi lime at 1,846-90 feet and was abandoned.

Hubbard, Spencer and others' No. 2 Thrall, NW NE NE Section 17-24-12, was shot with 200 quarts in broken sand at 1,718-77 feet. It made 225 bbls. the first 24 hours and when put on the pump made 100 bbls. in one day. It was completed.

Theta Oil Co. got no results after acidizing No. 9 Young, SW NE NE Section 10-23-13, which had a showing of oil in Mississippi lime at 1,800-35 feet, and may abandon it.

Simmons and others' No. 4 Clopton, NE SW NW Section 18-22-11, put in a 140-quart shot at 2,065-2,125 feet and the well pumped 50 bbls. in 24 hours.

Mendenhall Oil Co.'s No. 3 Hollister, SE cor. Section 5-25-13, is delayed at 210 feet by a fishing job; same company has made location for No. 1 Johnson (four-acre tract), NE cor. Section 8-25-13. Polhamus and Selby were drilling at 670 feet in No. 1 Smith, NW SE NE Section 6-24-12. York State Oil Co. has machine in for No. 16 Westcott, NE NE NW NW Section 33-22-11.

Cowley and Chautauqua

In Cowley County Van Meter and others have a rig up for a wildcat test, No. 1 Moore, NE cor. Section 5-35-4, and are drilling at 1,210 feet in No. 1 Brooks, SW cor. Section 5-33-3, after a several weeks' shut down. Theta Oil Co. is rigging up machine for No. 1 Webb, 660 feet from south line and 200 feet from west line of SE Section 23-31-10, Chautauqua County.

Sedgwick County

Plains Petroleum Co.'s No. 1-A Southwestern College, NE SE SW Section 2-27-1w, Wichita area, set 8-inch pipe on top of chat at 3,065 feet and was drilling at 3,095 feet with a showing of oil, gas and water.

Derby Oil Co.'s No. 4 Gorman, NW SW NW SW Section 6-26-1e, an old well plugged back, was shot in sand at 2,645-65 feet and was being cleaned out.

Pyle & Sutter's No. 2 Caldwell, NE NW SE SW Section 6-26-1e, pumped 40 bbls. of oil and 80 bbls. of water from

(Continued on Page 53)

Wildcat Operations in Kansas

Week Ending November 18

(Descriptions are East unless marked otherwise)

Company, farm and location—	Remarks:
BARTON COUNTY	
Atlantic Oil Prod. Co.'s No. 1 Schneider, C NE SW Sec. 15-20-13w	Drlg. 2,705 ft.
Gypsy Oil Co.'s No. 1 Soderstrom, SE NE NW Sec. 21-17-13w	P.B. to 1,000 ft.; drlg. 1,100 ft.
Helmerich & Payne's No. 1 Everleigh, C SW SE Sec. 13-18-13w	Drlg. 2,800 ft.
Skelton et al's No. 1 Ott, C SE SE Sec. 16-19-14w	O.W.D.D.; T.D. 3,706 ft.; bailing.
Sinclair Prairie Oil Co.'s No. 1 Redetzke, NE SE Sec. 9-16-11w	T.D. 530 ft.; U.R. csg.
BUTLER COUNTY	
Darby Pet. Co. and Lauck's No. 1 Lauck, SE SW SE Sec. 17-27-3	Location.
COWLEY COUNTY	
Yarnell et al's No. 1-A Speer, SE NE NE Sec. 31-33-6e	U.R. 6-in. csg.; T.D. 2,210 ft.
Van Meter et al's No. 1 Moore, NE cor. Sec. 5-35-4	Rig.
EDWARDS COUNTY	
Atlantic Oil Prod. Co.'s No. 1 Bradbridge, C SE NW Sec. 1-24-16w	T.D. 3,993 ft.; U.R. 6-in. pipe.
FINNEY COUNTY	
National Ref. Co. et al's No. 1 Smith, C SE SW Sec. 2-23-29w	Drlg. 2,780 ft.
HARVEY COUNTY	
Holbart Oil Co.'s No. 1 Harder, SE SW SE Sec. 11-23-1e	Drlg. 3,255 ft.
Holbart Oil Co.-Shell Pet. Corp.'s No. 1 Gingras, NE SW Sec. 8-24-1e	T.D. 3,048 ft.; running csg.
KINGMAN COUNTY	
Olson and Skelly Oil Co.'s No. 1 Emery, C SW NW Sec. 22-25-6w	Drlg. 3,846 ft.
Regina O. & G. Co. et al's No. 1 Wilson, NW NE Sec. 26-25-5w	Drlg. 4,160 ft.; H.F.W. at 4,065-4,113 ft.
McPHERSON COUNTY	
Dieter et al's No. 1 Carlson, SE cor. Sec. 4-19-3w	T.D. 3,122 ft.; S.D.
Regina O. & G. Co.'s No. 1 Vogts, C SE SE Sec. 8-20-1w	Viola lime 3,390-98 ft.; acidized; pumped 824 bbls. of fluid in 24 hrs.
Jim Madison's No. 1 Boesker, SE NW Sec. 29-20-1w	Spudded.
Harris & Haun's No. 1 Rupp, SW cor. Sec. 12-21-2w	Rig.
Paramount Oil Co.'s No. 1 Steinkirchner, NE SE SE Sec. 25-19-1w	Drlg. 3,160 ft.
RENO COUNTY	
Roth & Faurot's No. 1 Yoder, C NW NW Sec. 15-24-5w	T.D. 3,426 ft.; running 8-in. pipe.
RICE COUNTY	
Atlantic Oil Prod. Co.'s No. 1 Brandenstein, C SE SE Sec. 10-19-10w	Drlg. 2,390 ft.
Danciger et al's No. 1 Roesler, SW NE Sec. 11-18-10w	T.D. 2,660 ft.; fishing.
El Dorado Ref. Co.'s No. 1 Wernet, SW NE Sec. 12-20-6w	Drlg. 2,033 ft.
Elmer Corn et al's No. 1 Hunter, NE cor. Sec. 35-19-7w	Rig on ground.
Verne Simmons et al's No. 1 Hunter, NE cor. Sec. 35-19-7w	Rig.
Langston et al's No. 1 Markle, NE SW Sec. 1-20-9w	Rigging up.
RUSSELL COUNTY	
Western Exploration Co.'s No. 1 Andrea, SW cor. Sec. 30-15-12w	Drlg. 1,120 ft.
SALINE COUNTY	
Lario O. & G. Co.'s No. 1 Burrell, NW SW Sec. 15-14-2w	Drlg. 2,440 ft.
SEDGWICK COUNTY	
Wentz et al's No. 1 Stockamr, SW NE Sec. 31-26-2w	Drlg. 1,890 ft.
STAFFORD COUNTY	
Atlantic Oil Prod. Co.'s No. 1 Willinger, C NE NE Sec. 18-22-11w	Drlg. 1,510 ft.
Cameron et al's No. 1-A Funk, SW SE NW Sec. 6-26-2e	Rig.
WOODSON COUNTY	
Lewis Bros.' No. 1 Rigga, SW cor. Sec. 10-26-14	S.D. 609 ft.

North Louisiana Wildcatting Continues Strong; Renewed Activity in Miller Field, Arkansas

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Nov. 20.—The Crescent Drilling Co.'s No. 2 Bilbray, Section 29-8-11, in the northeastern part of the Zwolle Field, Sabine Parish, was the only completion of any consequence out of a total of six, all in the North Louisiana district. Six-inch casing was set at 2,275 feet and the well had only a good show with 500 feet of oil in the hole at 2,550 feet, but after treating the chalk rock with acid, it came back flowing 500 bbls. daily from the same depth. The Converse Field seems to be more consistent with production concentrated in a pool of smaller dimensions, whereas the Zwolle Field is more than 25 miles in length and from 2 to 3 miles in width, with production coming from cracks or crevices in the chalk. The Converse wells, though not of large initial flow, have shown a tendency to pump daily from 40 to 60 bbls. from the shallow chalk from 1,500-1,900 feet.

Two other small producers were reported. DeGeneres and McConnell's No. 2 Crawford, Section 20-9-13, Converse, is pumping 20 bbls. daily from 1,974 feet, and in Caddo Parish, M. Rodgers' No. 1 Muslow, Section 4-20-15, is pumping 25 bbls. daily from 1,499 feet. The Zwolle area contributed one of the three dry holes. Pelican Natural Gas Co.'s No. 21 Louisiana Long Leaf Lumber Co., Section 3-7-11, tested dry at 2,700 feet and after the use of acid only pumped 5 bbls. daily and was abandoned as a noncommercial well. Dillingham and others' No. 1 Eady estate, Section 33-16-16, Caddo Parish, made some more hole after testing dry last week at 3,011 feet, and was abandoned as dry at 3,101 feet. In DeSoto Parish, N. B. Porter's No. 1 Porter estate, Section 23-12-13, after being shut down for several months at 1,204 feet, was abandoned at that depth.

NORTH LOUISIANA

Wildcatting in the North Louisiana area continues to show strength with four in three different parishes out of a total of nine locations reported. In Natchitoches Parish, near the Sabine Parish line, J. B. Story, trustee, is rigging up on his No. 1 W. W. Page estate in Section 18-8-9. A block of 2,000 acres has been assembled around the test with a contract to drill a 2,600-foot hole. Gaskill and others' No. 1 Jim Guy, Section 3-11-13, DeSoto Parish, is rigging up for a 3,000-foot test on 2,900 acres, and in the same parish, A. F. Tarver has set 10-inch casing at 80 feet and is drilling his No. 1 Barnhart in Section 16-15-13. The latter will make a 4,000-foot test which should contact the Woodbine in that area. The fourth new wildcat operation, C. R. Reid's No. 1 Doty, Section 7-16-11, Bossier Parish, is rigging up. The other five new operations were all staked in the proven or semi-proven areas of Converse and Zwolle.

Deep Test in Sligo

United Gas Public Service Co.'s No. 1 Skannell unit, Section 13-17-12, in the old Sligo gas field, Bossier Parish, will be watched with interest from the present depth to completion as it will be a deep test. Gas production in this field has come from horizons from 1,400 to 2,400 feet, and the present well has passed up these sands and set 9⅝-inch casing at 2,660 feet, after setting 12½-inch surface casing at 201 feet. The same company's No. 2 Tony Durrett, Section 5-19-5, in the Sugar Creek area of Claiborne Parish, has drill stem stuck 150 feet off the bottom at 4,604 feet, and the well has shown a small amount of salt water at this depth. A wildcat in DeSoto Parish, Jack Whitson's No. 2 Sanders, Section 19-11-13, tested an estimated 1,000,000-foot flow of gas from lime at 3,230 feet and arrangements are being made to set casing.

Two other hot wildcats have shown a tendency to cool off considerably during the past week. Foster & Woodley's No. 1 D. E. Stevens, Section 17-9-11, in the Spring Ridge district of Sabine Parish, continued to test dry after using acid to dissolve cement thought to have the pay cut off at the bottom. Seven-inch casing was set at 3,146 feet with the total depth at 3,166 feet. In Webster Parish, south of the town of Sibley, J. P. Evans' No. 1 Claude Burson, Section 27-18-9, experienced the same results in the Woodbine as in the Blossom horizon. With 3 feet of cap rock over sand, a 15-minute drill stem test from 3,342-51 feet developed 38 fourbles of salt water with a show of gas. The formation was identified as the true Woodbine, and as the test is to go 4,000 feet, the crew is drilling in hard formation at 3,475 feet. It is reported the same operator is arranging to drill another well on the same block about 2 miles to the west.

In the central part of the State, three wildcats are active. In Grant Parish, L. L. Lindsay's No. 1 Edenborn, Section 13-7-4, is drilling in gumbo at 794 feet with the base of the Jackson logged at 735 feet. To the north of this test in Winn Parish, J. L. Pitts and others' have spudded in on their No. 1 Southern Advance Bag & Paper Co. and are arranging to set surface casing. Smith, Burton & Kelly's No. 1 Fullerton Mineral Co., Section 32-1n-5w, Vernon Parish, is drilling at 3,770 feet.

ARKANSAS

Although practically on a standstill for the past three months, it is reported activity will be renewed in the Miller County Field, east of Texarkana. Murdock and others, who own the only two producing wells in the field, will drill two or more others, and some of the wells shut down for a long period will continue making hole. One of the latter, Black Diamond Oil Co.'s No. 1 Miller Land & Lumber Co., Section 29-18-27, is reaming out hole with the total depth at 1,835 feet. Duluth-Arkansas Oil Co.'s No. 2 Beck, Section 34-15-26, is temporarily shut down with junk in the hole at 2,807 feet. This test cored 3 feet of likely looking sand from 2,804 feet to the total depth a few weeks ago, and arrangements were being made to set casing to test.

There are eight other active rigs in four different counties in South Arkansas. In Columbia County, C. W. Alworth and others' No. 1 W. D. King, Section 16-17-20, is drilling in shale at 2,135 feet, and O. F. Whittaker's No. 1 Garney, Section 11-15-20, is drilling in gumbo at 1,480 feet after setting 12½-inch casing at 62 feet. M. E. Sanderson's No. 1 A. E. Hale, Section 22-12-29, Little River County, is coring in a limey formation at 1,788 feet. Ouachita County has three active tests. F. G. Harrell's No. 1 Poindexter, Section 35-15-18, cored sandy lime from 2,255-62 feet; L. L. McDonald has set 10-inch casing in his No. 1 J. A. Robertson in Section 25-15-16, and J. D. Reynolds' No. 1 Snow Hill Baptist Church, Section 28-15-15, had a good show at 1,969 feet, but is drilling deeper with cable tools at a total depth of 2,034 feet. In Union County, E. R. Henderson's No. 2 J. H. Ogden, Section 32-18-14, is waiting on standard rig to pump with 75 feet of oil in the hole at 2,208 feet, and the Marine Oil Co., in the Urbana district, is drilling in shale at 1,970 feet on its No. 2 Union Saw Mill Co. in Section 3-18-13.

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

North Louisiana

BIENVILLE PARISH

Company, well, farm name, section and block—	Remarks:
Poole & Johnson's No. 1 H. E. Sudduth, 1,170 ft. E and S, C Sec. 28-14-16	Derrick.

BOSSIER PARISH

McKinney & Stewart's No. 1 Nattin, 470 ft. W, 1,620 ft. S, NE cor. Sec. 22-22-14	Set 10-in. 250 ft.
H. I. Morgan's No. 2 Smith, 1,520 ft. N, 660 ft. W, SE cor. Sec. 22-19-11	Dry and abd. 6,147 ft.
C. E. Reid, tr.'s No. 1 Doty, 730 ft. S, 618 ft. W, NE SE Sec. 7-16-11	Rigging up.

CADDO PARISH

R. E. Davidson et al's No. 1 DeWitsey MacMillan, 500 ft. N, 330 ft. E, SW cor. Lot 16, Sec. 23-16-13	S.D. 1,024 ft.
J. B. Hutchinson, tr.'s No. 1 Story Phillips, 330 ft. N and E, SW cor. SW NE SE Sec. 28-16-13	T.A. 2,646 ft.
A. D. King, tr.'s No. 1 Roach, 641 ft. E, 375 ft. N, SW cor. Sec. 4-14-16	S.D. 1,154 ft.

CALDWELL PARISH

Hartley et al's No. 1 Taylor, most southeasterly cor. Sec. 42-14-4e	Derrick.
Terrell & Price's No. 1 La. Central Lbr. Co., 300 ft. N, 200 ft. W, SE cor. NW NE Sec. 18-11-3e	Coring 1,705 ft.

CATAHOULA PARISH

George Greer et al's No. 1 Millsap, 250 ft. S and E NW cor. Sec. 22-10n-7e	S.D. 3,018 ft.

DESOTO PARISH

Bailey Gantz et al's No. 1 Jenkins, NW cor. SE SW Sec. 35-13-13	S.D. 3,600 ft.
Gaskill et al's No. 1 Jim Guy, 200 ft. N, 300 ft. W, SE cor. Sec. 3-11-13	Rigging up.
Gravel Point Synd.'s No. 1 Guy, 200 ft. N and E, SW cor. Sec. 4-14-12	Drlg. 1,600 ft.
Hirschfield-Bailey Interests' No. 1 Mickie, 660 ft. N and E, SW cor. SE Sec. 7-13-12	Set 8-in. 1,282 ft.; T.D. 1,775 ft.
N. B. Porter's No. 1 J. W. Porter Est., 330 ft. N and E, SW cor. SE SE Sec. 23-12-13	Dry and abd. 1,204 ft.
D. H. Sebastian, Jr.'s No. 1 W. H. Hill et al, 200 ft. S and E, C Sec. 3-10-13	Rigging up.
A. F. Tarver's No. 1 Barnhart, 330 ft. N and W, SE cor. NE Sec. 16-15-13	Set 10-in. 80 ft.; drlg. 475 ft.

GRANT PARISH

L. L. Lindsey et al's No. 1 Edenborn, 250 ft. E, 150 ft. N, SW cor. SE SE Sec. 13-7-4	Drlg. 794 ft.

JACKSON PARISH

A. C. Thomas' No. 1 Johns, 330 ft. N and W, SE cor. NE NE Sec. 25-1s-3	S.D. 2,055 ft.

NATCHITOCHES PARISH

Geo. R. Stevens' No. 1 Clarke-Boyce Lbr Co., 330 ft. N and W, SE cor. Sec. 10-5n-6w	Rigging up.
J. B. Storey, tr.'s No. 1 Page est., NE cor. SE NW Sec. 18-8-9	Rigging up.

SABINE PARISH

Frank R. Foster, Inc.'s No. 1 D. E. Stephens, 330 ft. S and E, NW cor. SE NW Sec. 17-9-11	Testing 3,166 ft.

CONVERSE DISTRICT

Arrock Oil Co.'s No. 1 Hewitt, 330 ft. N and E, SW cor. NE SE Sec. 20-9-13	S.D. 1,976 ft.
W. T. Boyd's No. 1 W. A. Litton, 62 ft. S, 65 ft. E. of NW cor. Blk. 30, center of Lot 3, Converse townsite, Sec. 10-9-13	Set 6-in. 1,475 ft.
Calatex O. & G. Co.'s No. 1 Whitney Corp., 415 ft. N, 330 ft. E, SW cor. SE Sec. 4-9-13	Rigging up.
A. G. Craig's No. 1 Belton, 330 ft. N and E, SW cor. NW NW Sec. 33-9-13	S.D. 40 ft.
Florence Oil Co.'s No. 1 Crawford, 330 ft. S and W, C Sec. 20-9-13	Rigging up.
Gerhig Oil Co.'s No. 1 Burkett, 330 ft. S and W, NE cor. SE SE Sec. 9-9-13	Drlg. 550 ft.
Helena O. & G. Co.'s No. 2 Chambliss, 330 ft. S and E, NW cor. SW NE Sec. 20-9-13	Set 6-in. 1,492 ft.

(Continued on Page 77)

Daily Average Runs

North Louisiana and Arkansas showed a net gain of 540 bbls. daily in the average runs during the past week, the former increasing 340 bbls. and the latter 200 bbls. Zwolle in Sabine Parish came back over the 6,000-bbl. daily mark after dropping below that figure for one week. The daily average runs from the several pools were:

NORTH LOUISIANA

Caddo, light	4,460
Caddo, heavy	1,315
Converse	645
Cotton Valley	465
DeSoto and Red River	1,490
Elm Grove	370
Haynesville	3,825
Holly	195
Homer	2,585
Pleasant Hill	225
Sarepta-Carterville	790
Urania	3,015
Zwolle	6,315
Total North Louisiana	25,695
Total previous week	25,355
Increase	340

ARKANSAS

Champagnolle	1,270
El Dorado	2,600
Lisbon	410
Miller County	580
Nevada	550
Smackover, light	2,625
Smackover, heavy	21,190
Stephens	650
Urbana	3,000
Total Arkansas	32,875
Total previous week	32,675
Increase	200
Total both states	58,570
Total previous week	58,930
Increase	540

Activity in Nueces County Expected to Follow Assurance Banquette Well Is a Producer

By B. D. STEVENSON
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Nov. 20.—Banquette Oil Co.'s No. 1 Ingram in Nueces County came in late in the week in sand at 4,879-82 feet, a big gas well, making considerable oil. It was allowed to blow for a time before gauging. The pressure is about 1,700 pounds and it is thought the oil is heavier than the gasoline oil being produced by the Houston Oil Co.'s No. 1 Ollie Purl, a half mile north of it. These and the Houston Oil Co.'s No. 1 Comstock, a mile northeast, are the only deep producers in the territory immediately east of the Agua Dulce 2,000-foot gas production. Both of the Houston Oil Co. wells were drilled several years ago.

Two miles south of the Banquette's No. 1 Ingram the Texon Royalty Co.'s No. 1 McCoy has been abandoned at 5,003 feet. It failed to find the sand producing in the three other deep tests.

Assurance that the Banquette well will make a producer is expected to start activity in that district drilling for for this deeper sand with the possibility of developing an important pool. Garland Clymore has closed a deal for the purchase of 80 acres from Ollie Purl on whose land the Houston Oil Co.'s No. 1 Purl is located, and the understanding is will start at once to build a 50,000-gallon natural gasoline plant and develop his 80 acres.

The Agua Dulce Pool is in the western part of Nueces County, a mile southeast of the little town of Agua Dulce and south of the railroad.

Jim Wells County

Trinity Drillers' No. 1 Seeligson, in Jim Wells County, a little west of the Magnolia Petroleum Co.'s producer on the Seeligson land, is in a sand with good showing of oil at 2,365-74 feet. The plan was to take another core and then run a test. Magnolia drilled two holes on the Seeligson land. The first was a failure, though it had some good looking sands and the No. 2 made an oil well in sand at 3,247-53 feet. It doesn't seem to have had a sand corresponding to that to be tested by the Trinity Drillers.

Magnolia's No. 2 Seeligson was completed last April. Its No. 1 Seeligson was drilled last year and was abandoned in May, 1932, at 6,010 feet. It had a sand at 3,420 feet that showed a little oil. Sand conditions seem to be good in the Trinity Drillers' No. 1 Seeligson, and there is some prospect of an important pool.

This prospective field is in a zone where the depths of the sands and age of the producing formations corerspond to those of the Agua Dulce and Refugio Fields. It is a strictly coastal proposition and the area was well worked with geophysics before being drilled. Sinclair owns an interest with the Magnolia and the Slick estate is a heavy owner in the territory and also owns an interest with the Magnolia. Magnolia built a short line from its one producing well to the railroad track 4 miles away and has been producing and shipping the oil.

Duval and McMullen Counties

A flush production of 4,968 bbls. daily from 7 wells in the North Government Wells district, all of them on choke, was reported the past week. Navarro Oil Co. completed two tests in the west half of Survey No. 360 at the north end of the North Government Wells Field, completing the development of that half section and Humble completed two in the west half of the east half of that survey, which completes the development of that 80. On the north row of tests Magnolia completed its No. 6 on the east end and No. 5 on the west end. The north end of the field now lacks one row of wells of being a full mile wide.

One of the completions of the week was the Sun Oil Co.'s No. 10 Weiderkehr, 990 feet from the north line and 330 feet from the east line of Survey No. 361, the southernmost test in the northwest extension to the Government Wells Pool. It is really a separate pool and this Sun Oil Co. completion makes that pool seven wells long north and south, the tests spaced 660 feet apart. The Texas Co. is on the sand with casing set at 2,295 feet in its No. 1 Duval County Ranch Co., 990 feet from the north line and 330 feet from the west line of the southeast quarter of Survey No. 362, which is just 660 feet east of the nearest producer on that end of the field. It is waiting on cement. If it makes a well the new pool will be 6 wells wide spaced 660 feet apart.

It begins to look as though there is going to be another line of production running north and south just west of the Government Wells chain, and including this so-called northwest extension.

Magnolia Close to Sand

Magnolia at the close of the week was down practically to the sand depth in its No. 3 Lundell, 330 feet from the south line and 150 feet from the east line of the southeast quarter of Survey No. 60, a half mile west of the south end of the original Government Wells Pool and an east offset to the Rodney DeLange No. 1 Lundell that came in a well last week. Humble's south offset has not started yet. The Rodney DeLange well, the KOT Oil Co. well, 1½ miles north, and the northwest extension of the North Government Wells Pool seem to indicate that there is a chance of the development of this new line of pools west of the Government Wells line.

The Sun's No. 10 Weiderkehr on the south end of the northwest extension pool came in for 840 bbls. daily and the Sun owns all the leases for 2 miles south of that. The Magnolia's No. 6 Duval County Ranch Co. on the east end of the north line of producers in the North Government Wells Field and the No. 5 on the west end of that line of producers each came in for about 300 bbls. daily. They are a trifle smaller in production than others they offset on the south.

Late in the week a deal was being closed whereby Mrs. Norma M. Hancock bought the Trinity Drillers interest in the new Eagle Hill Pool, 4 miles north of the North Government Wells Pool, and also the Trinity Drillers' interest in the Hagist ranch north of that, with one wildcat test down about 1,900 feet in B.B.B.&C. Survey No. 1 near the McMullen County line.

The Texas Co.'s No. 5-A Duval County Ranch Co., north offset to the discovery well on the Eagle Hill Pool, stands nearly full of oil, but failed to flow. The company reran the tubing and is working with it to make it flow. It is the third producer in the field, and two others are due to be completed by the end of this week. They are the Buchanan No. 2 Duval County Ranch Co., south offset to the discovery well and north offset to Kelley's No. 1 Foster, and the Kelley No. 2 Foster, south offset to the No. 1 and the O. W. Killam No. 3 Wood-Welder, 1 mile south and one-half mile east of the Kelley No. 2 Foster.

Balcones Fault Zone

Amerada Petroleum Corp. finally cleaned the hole in the No. 1 Doerring in southwestern Frio County, its deep Edwards lime test, and has resumed drilling. The last depth reported was 5,913 feet. It was at 6,312 feet that the No. 1 Halff & Oppenheimer, 7 miles northeast, was abandoned in Edwards lime. The No. 1 Doerring is supposed to run higher but in that district no other deep tests have ever been drilled and there is nothing with which to correlate.

C. J. Webster Oil & Gas Co. set surface casing and resumed drilling in the No. 2 McCrory in Caldwell County, a little east of the No. 1-A, which made a producer in crevice in the chalk. The objective is an Edwards lime pool between the Branyon Pool on the southwest and the Dale on the northeast and on an extension of the Luling fault line. The location of the No. 2 McCrory was made with the aid of the logs of several other tests and seems to stand a pretty good show.

A new effort is to be made to find Edwards lime production on the Mission Fault line in Bexar County, 14 miles southwest of San Antonio. Howard Nessley has made location for the No. 1 Caffey, 330 feet south of the center of the south line of the Samuel Wilson Survey No. 51. It is a little southwest of where Humble drilled on the Oppenheimer a few years ago and northeast of where Boler recently got a good looking core in the Edwards in the No. 1 Kearney.

Pettus District

United Production Co. is going back into the No. 3 Ray, which was drilled to 6,012 feet in the Pettus Field, and will plug it back to the Pettus sand at 4,090 feet.

New Wildcats

Coffey and others are going to drill on the Parr ranch in Duval County a few miles northwest of San Diego.

A new wildcat is to be drilled in Jim Well County, 1½ miles west of Alfred.

A wildcat is to be drilled on Gulf Production acreage in Bee County, north of the Pettus Pool.

Wildcat Operations in Southwest Texas

Week Ending November 18

Company, well, farm name, section and block—	Remarks:
ATASCOSA COUNTY	
E. O. Burton's No. 1 Blankenship, 1,470 ft. from NW line, 1,830 ft. from SW line of 320-ac. tract in T. Orr Sur. No. 176	Rigged up.
Dan McMahan's No. 1 Smith & Mowinkle, 245 ft. from NE line, 2,300 ft. from SE line of Alexander, Crain, Harris & Brooks	Rigging up.
BASTROP COUNTY	
Three Oil Co.'s No. 1 M. Ingram, 1,250 ft. from SW line, 940 ft. from SE line of tract in M. Morgan Sur.	Rigged up.
BEE COUNTY	
W. P. McLain's No. 1 Weiss, 400 ft. E of line between E. S. Price's Nos. 1 and 2 Weiss	T.D. 4,525 ft.; tested 24 fourbles S.W. in 8 min. in sand at 4,510-25 ft.
BELL COUNTY	
Gus Winston et al's No. 3 Warrick, 100 ft. N of James Scoggins' No. 1 Warrick, in Elijah Ingram Sur.	T.D. 1,775 ft. in wtr. sand.
R. S. Wilson's No. 1 Davenport, 200 ft. from W line, 700 ft. from S line of J. L. Herred Sur.	T.D. 1,235 ft.; standing.
BEXAR COUNTY	
C. I. Albertson's No. 2 C. Hoke estate, 675 ft. from E line, 250 ft. N of Medina River in Jose Maria Barrera Sur.	T.D. 1,015 ft.; drlg. shale.
Motes-Campbell's No. 2 Stumberg, 450 ft. from N line, 450 ft. from W line of S. Stumberg 140-ac. tract in F. Rolen Sur. No. 48	T.D. 597 ft.; no report.
George L. O'Neill's No. 1 Neimann in Juan Montez Sur. No. 6	T.D. 904 ft.; drlg.
J. W. Johnson's No. 1 Willow Springs, 150 ft. from N and W lines of lease in B. Munoz Sur. No. 151	Set surface csg.
Montgomery & Ririe's No. 1 Wm. Russell, 1,300 ft. from SE line, 600 ft. from SW line of tract in Fernando Rodriquez Sur.	T.D. 1,250 ft.; standing.
Howard Nessly's No. 1 Coffey, 330 ft. S of center of S line of Samuel Wilson Sur. No. 51, in Fernando Rodriquez Sur.	Rigged up.
Fred Perrenot's No. 1 Ruiz, SE cor. of 82-ac. tract in F. Rowland (Rolen) Sur. No. 48	T.D. 819 ft.; standing.
Fred A. Perrenot's No. 1 Russell, 750 varas from NE line, 54 varas from NW line of 500-ac. tract in Rodriquez Sur.	T.D. 1,315 ft.; standing.
H. A. Pagenkopf's No. 1 G. A. Goeth, 500 ft. from SE line, 600 ft. from SW line which is San Antonio River, Juan Montes Sur.	T.D. 2,010 ft.; sidetracking.
C. A. Smith's No. 1 Henry Lamb, 750 ft. from N and E lines of Lamb farm, in de la Garza grant	T.D. 671 ft.; drlg. shale.
F. E. Tegler's No. 1 Brackenridge, 578 ft. from S line, 2,284 ft. from W line of tract in Maria Gertrudis de Alanis Sur.	T.D. 1,331 ft.; standing.
W. L. Umburn's No. 1 E. L. Kampf, 150 ft. from N line, 450 ft. from W line of lease in S. McCulloch Sur.	T.D. 910 ft.; drlg.
BLANCO COUNTY	
Blanco Development Co.'s (McGee) No. 1 A. J. Dittmar, 1,320 ft. from S line, 150 ft. from W line of George Evans Sur. No. 58, 4 miles NW of Johnson City	T.D. 860 ft.; drlg.
Isham et al's No. 1 Lester ranch, 200 varas from N and E lines of Antonio Bandrand Sur., 8 miles NE from Johnson City	T.D. 405 ft.; S.D.
CALDWELL COUNTY	
Hinton & Dodson's No. 1 Walker, 600 ft. from N line, 300 ft. from W line of Spencer Morris Sur.	T.D. 2,320 ft.; drlg. hard Taylor.
E. L. Hope and Joe Cole's No. 1 Mike August, 150 ft. from NE line, 165 ft. from NW line of tract	T.D. 1,961 ft.; S.D.
F. L. Thomson's No. 2 Lawler, 150 ft. from NW line, 450 ft. from SW line and road in J. H. Lawler's 134-ac. tract in James Berry Sur.	Rigging up.

(Continued on Page 77)

Louise, Wharton County, Is Center of Interest; Wild Wells Feature Coastal Development

By W. A. SPINNEY
Gulf Coast Bureau, The Oil and Gas Journal

HOUSTON, Tex., Nov. 20.—The Louise area of western Wharton County, where Pure Oil Co. is attempting to make a full grown oil field out of its wholesale wildcat development there, continues the center of interest on the Gulf Coast, and, as if to initiate the opening of a new field in real, modern, coastal style, one of three wells being completed almost simultaneously blew out late the past week, ignited, and at latest report was still blowing wild on fire.

This well, No. 1 Wallace Houston, in the T. W. Heard Survey, Section 28, is in a sand at 6,441-51 feet, which has looked very promising for the making of a good producer. Running out of control, the well is making a large volume of gas showing considerable oil. The blowout occurred while drill pipe was being pulled after the drilling out of plug of the 7-inch casing cemented at 6,451 feet to test the sand. Attempts were made to close the blowout preventer, but the well soon cut out the connections. The full flow string probably will prevent a crater, but the well will have to be killed to set screen.

Two other wells, each in an entirely different sand, are ready for completion, but these may be delayed pending killing of the Wallace Houston well. At latest report, both were standing cemented after running casing. Each has a one-string setting job with screen being run in on the bottom of the casing. One, No. 1 Stewart, is in sand with bottom at 5,983 feet, with 7 feet of screen. The other, No. 1 Kuntze, a mile southeast of the Stewart well, is in sand at 7,118-43 feet with 21 feet of screen.

The Stewart well is one which the company has been working with for some time, being the first test started in the Louise wildcat development project. A month ago it was brought in with screen set at 6,024 feet, but it made considerable water and was killed and since then a new hole has been drilled from 5,391 feet, where the old hole was milled out. This well has been drilling since December, 1932, and has been taken to a total depth of 8,076 feet. Much trouble has been experienced and a number of plug back and sidetracking jobs have been made necessary.

One other test still is drilling at Louise, this being Pure's No. 1 W. H. Lancaster, which at latest report was drilling in shale at 6,539 feet. Four other wildcats, which have been drilled simultaneously on the same block in one of the largest and most unusual wildcat development programs ever undertaken by any one company, are standing waiting developments in the other wells after going to various depths below 6,100 feet without encountering any showings of importance.

Wild Well at Coletto Creek

Pure Oil Co.'s Wallace Houston blowout at Louise is one of two new wells which got out of control the past week to add to the long list of wild wells which have been experienced on the Gulf Coast within the past year. In the Coletto Creek area of Victoria County, Stoneleigh Oil & Gas Co.'s No. 1 J. Zimmer, R. Manchola Survey No. 2, blew out early in the week while at a total depth of 4,846 feet, and at latest report was still running wild, making considerable gas and water.

Coletto Creek, or Raisin, as it is being called now by some, is another new coastal area in which a wet gas well was completed by the same operators earlier this year in a sand at 4,400 feet. The Zimmer well, located east of the discovery gasser, is the second test started, although two other tests now are drilling. The Zimmer well has encountered several sands and created considerable interest when attempts were made by the operators to complete it as a producer in a 2,800-2,900-foot Miocene sand. The sand lenses, however, has been found thin and water has discouraged attempts to make a well.

Refugio County

While Louise and Coletto Creek added to the long list of blowouts on the coast, Humble Oil & Refining Co.'s No. 1 Heard at Greta, Refugio County, was still running wild on fire and cratering after being out of control since late in October. It blew out while drilling at 3,030 feet and is the third crater well for Greta.

Greta Field

Of particular interest at Greta during the week was the purchase by Atlantic Oil Producing Co. of Floboots Oil Corp.'s "A" and "B" leases on the O'Brien land in the M. J. Ximines and J. H. Peoples Surveys. These leases consist of 120 acres and include two producing and one drilling well. Atlantic has been a steady and consistent purchaser in the Greta Field and now has built up an important reserve there.

The allowable production of the Greta Field was reduced again the past week, the base now being 4.34 bbls. per acre with a maximum of 108 bbls. for 25-acre units. The field still is on a 20-acre unit drilling basis, such units being allowed 80 bbls. daily, but due to the large number of uniform 50-acre tracts in the field, operators, in lieu of drilling a third well on the extra 10 acres, are permitted to produce from two wells an additional allowable for the 10 acres.

A number of outpost tests were started during the week at Greta. In the north end, Trinity Drillers' No. 1 Welder, 1½ miles from the nearest production, has spudded. In the south end Standard Oil Co. of Kansas has made location for its initial test in the N. S. Crunk Survey. Humble Oil & Refining Co. has made location for No. 2 Heard, an east offset to the Standard test. These are the most southeasterly tests for the field to date.

Although drilling continues active, there were no additional completions in the field during the week. Several tests are on the sand but it should be several days before any of these are completed.

Conroe Field

The Railroad Commission has reduced the daily allowable of the Conroe Field from 50,000 to 49,000 bbls. This makes the per well limit 76 bbls. In figuring the allowable, Harrison & Abercrombie's crater well, which now is producing more than 6,000 bbls. daily, is not taken into consideration.

Humble Oil & Refining Co., which recently purchased the well with a view toward killing it, now is drilling a "relief" well 427 feet northeast of the crater as a part of its first plan for carrying out that undertaking. At latest report the hole was down 397 feet with 20-inch casing cemented with 458 sacks. This hole will be carried to 1,400 feet, from which point an attempt will be made to deflect the hole to a point near the bottom of the crater well, and then mud and water will be pumped into the sand. The deflection of the hole will be directed by John Eastman of California, a specialist in the use of the whipstock.

Barbers Hill

Considerable interest now is being directed at Barbers Hill, where the first potential test attempted on a coastal salt dome is located. Potentials will be made on all flowing wells which will be produced under various chokes for a 24-hour period. In the past there has been much consideration of the subject of how much a salt dome well could be pinched back without endangering it, consequently, these tests will be of great importance.

The most recent cutting of the state allowable to 868,287 bbls., allocating approximately 142,056 bbls. to the Texas coastal district, has created much discussion among operators here and it is quite likely that at the next statewide proration hearing a strong protest will be made of the drastic reduction. The potentials are being taken at Barbers Hill to provide information for the hearing.

Livingston Field

Activity in the Livingston Field is being increased by several additional tests being started by Humble Oil & Refining Co. on the southwest side of the area. Locations have been made by this company for Nos. 4, 5, 6 and 7 Grandbury, all west of No. 1 Grandbury, recently completed as a west extension of the field. At latest report, Humble had drilled plug in its No. 2 Grandbury, south of the first well. Bottom of hole is 4,310 feet.

B. & W. Oil Co.'s No. 1 J. M. West, south extension test at Livingston, drilled to a total depth of 4,370 feet found water and now is being plugged back to retest the sand around 4,360 feet. Shell Petroleum Corp.'s No. 3 Davis-Holmes established the eastern edge of the field by finding water after drilling to a total depth of 4,529 feet. However, it is being plugged back 40 to 50 feet in an attempt to shut off water and make some kind of a producer.

Tomball

The Tomball Field of Harris County was extended to the north about a half mile by the completion of Magnolia Petroleum Co.'s No. 1 Irvine, Joseph House Survey. Like many of the other wells of the field, this is a gasser, making an estimated 2,000,000 feet daily through a three-sixteenths inch choke with a pressure of 1,700 pounds on the tubing. Bottom of the hole is 5,588 feet. Another extension well is indicated in Texas Co.'s No. 1 Hirsch, Joseph House Survey, a quarter mile east and north of Continental Oil Co.'s No. 1 Petrick, the present most northerly oil producer of the main field. Texas Co.'s well is in sand at a total depth of 5,585 feet and is standing with casing cemented.

Stanolind Oil & Gas Co.'s No. 1 Theis, 7,500 feet northwest of the Tomball Field in Montgomery County, which recently was completed as an extension producer, has been put back on production with completion of a line from the well to Huffsmith on Stanolind Pipe Line Co.'s trunk line, 2 miles distant. The well, which has been shut in with storage full, started off with a flow of 22½ bbls. an hour and in 24 hours made 540 bbls., making it one of the best oil producers of the field.

Humble Oil & Refining Co. and Magnolia Petroleum Co.'s No. 1 Petrick, located about a quarter of a mile northwest of the discovery well in the Tomball Field, was completed during the week for 20 bbls. of oil an hour through a one-quarter inch choke from a total depth of 5,566 feet.

Magnolia Petroleum Co.'s No. 1 Rudel-Oster, in Joseph House Survey, found water in sand at 5,616-20 feet, and will be plugged back to the gas sand found at 5,569-88 feet.

Amerada Petroleum Corp. and others' No. 1 Fletcher, in Joseph House Survey, in the north end of the field, and the south offset to Texas Co.'s No. 1 Hirsch, has landed casing at 5,563 feet, and the test is showing oil from sand at a total depth of 5,591 feet.

Arriola Dome

Republic Production Co. and Houston

Gulf Coast Fields and Wildcats

Week Ending November 18

DAMON MOUND—BRAZORIA COUNTY

Company, farm and location—	Remarks:
Intercoastal Oil Co.'s No. 11 Wisdom, 350 ft. E of No. 6, Blk. 51, Lot D, A. Durst Sur.	No report.

MANVEL—BRAZORIA COUNTY

Texas Co.'s No. 6 Belcher, H. N. Little Sur., South 42° W 1,400 ft. and S 48° E 400 ft. from N cor. lease	T.D. 5,476 ft.; standing.
Texas Co.'s No. 7 Belcher, 1,430 ft. S 48° E, and 900 ft. W 42° E from NW cor. of W. T. Belcher "A" lease, H. N. Little Sur.	Rigging.
Texas Co.'s No. 1 Ellis, 1,660 ft. N, 807 ft. S, from NW cor. of lease, H. N. Little Sur.	Drlg. sand and shale 5,861 ft.

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Prod. Co.'s No. 5 Fisher, Wm. Bloodgood Sur., 75 ft. N line, 191 ft. W of No. 4	Sand 5,273-5,303 ft.; S.O.
Mills Bennett Prod. Co.'s No. 3-E Gulf fee, 442 ft. W along S line, 710 ft. N at right angles to S line	Drlg. sand 4,876 ft.
Mills Bennett Prod. Co.'s No. 1-D Barber, 78 ft. S, 65 ft. W of NE cor.	Recmtd. csg. 1,359 ft.
Humble O. & R. Co.'s No. 3-C Kirby, H. Griffith Sur., 311 ft. from SE line, 659 ft. NE line of lease	Drlg. salt 2,024 ft.
Sinclair Prairie Oil Co.'s No. 14 Wilburn (W.O.)	Sidetrack 3,700 ft.; drlg. new hole 3,903 ft.
Sinclair Prairie Oil Co.'s No. 15 Wilburn, Henry Griffith League, 150 ft. W of No. 14	Drlg. salt 2,430 ft.
Sinclair Prairie Oil Co.'s No. 16 Wilburn, 50 ft. N and 50 ft. W of No. 12	Drlg. sand 4,633 ft.
Sun Oil Co.'s No. 16 J. Wilburn, Henry Griffith Sur. (W.O.)	T.D. 3,760 ft.; to W.O.
Sun Oil Co.'s No. 17 Wilburn, Henry Griffith League, 150 ft. W of No. 6 and 50 ft. S of N line	Drlg. sand 953 ft.
Sun Oil Co.'s No. 18 Wilburn, Henry Griffith League, 50 ft. N of S line, 50 ft. E of W line of lease	Rigging.
Texas Co.'s No. 7 Wilburn (W.O.), Henry Griffith League	Comp. 235 bbls.; ½-in. choke, 4,935 ft.

(Continued on Page 74)

Oil Co. have completed another good well at their Arriola Dome, eastern Hardin County. This well, No. 5 Arriola fee, came in flowing initially at the rate of 50 bbls. an hour through chokes from sand at a total depth of 4,184 feet. It is approximately 400 feet northeast of No. 4 Arriola, completed some weeks ago, and which definitely established the potential importance of the field by blowing wild several days, making more than 10,000 bbls. daily. These two wells, together with two other smaller wells, have been pinched to a field allowable of 585 bbls.

Matagorda County

At Buckeye, in Matagorda County, United North and South Development Co.'s No. 1 Unit 25 has found a showing of oil in sand at 8,169-79 feet, where a drill stem test will be made. This is a new pay horizon for the Buckeye Field, previous production having been from a horizon at 7,900-8,000 feet.

Iowa Field

At Iowa, on the boundary lines of Jefferson Davis and Calcasieu Parishes, Louisiana, Barnsdall Oil Co. and others' No. 1 Fontenot, Jefferson Davis Parish, made an initial production of 1,095 bbls. a day through a one-half inch choke from the regular producing sand in the Iowa Field at 6,926-41 feet. This well extended the production a quarter of a mile to the east and it is the most easterly well in the field. It forces the Shell Petroleum Corp. to drill three offsets. The Iowa Field now covers a territory of 1 mile north and south and 1¼ miles to the east and west. Five other tests are drilling in the field at the present time.

Port Barre Dome

The Cal Oil & Gas Co.'s No. 1 Thompson, in the Port Barre Dome, St. Landry Parish, encountered a showing of oil in sand at 3,397-3,412 feet. Casing has been landed at 3,410 feet and a test of this showing will be made during the week.

St. Martin Parish

Continental Oil Co. has taken over the wildcat test and acreage of the Standard Oil Co. of Kansas, in St. Martin Parish, the No. 1 Hopkins, located in Section 83-10s-6e, which has been shut down at 6,010 feet for several weeks. Continental is preparing to set 7-inch casing at this depth and then carry the hole to approximately 8,000 feet unless commercial production is found at a shallower depth.

New Iberia Dome

A showing of oil and gas was found in the test of Y. D. Spell's No. 1 Bernard, in the New Iberia Dome, in Iberia Parish. The oil and gas showing was found in sand at 2,440-60 feet. A drill stem test will be made during the week.

The daily production from the Louisiana Gulf Coast fields reached a new peak for all time for the week ending November 11, when the daily average was approximately 50,555 bbls. The Federal allowable for the State was placed at 70,000 bbls. daily for the month of November.

Liberty County

Two interesting wildcat tests are preparing to start drilling operations in Liberty County this week. One is Gulf Production Co.'s No. 1 Kirby Lumber Co., in J. Pleasant Survey, western part of the county, and the other is Layton and others' No. 1 J. A. Lovett, in the P. P. Devers Survey, located southwest of the Hull Field.

Activity at Hull continues with a new well expected to be completed early this week, this being Miramar Oil Corp.'s No. 1-B Phoenix Development Co., in Jesse Devore Survey, which is down 5,299 feet. Location of this well is several hundred feet south and outward from the dome from the Jackson sand development under way along the south side of the dome.

Colorado County

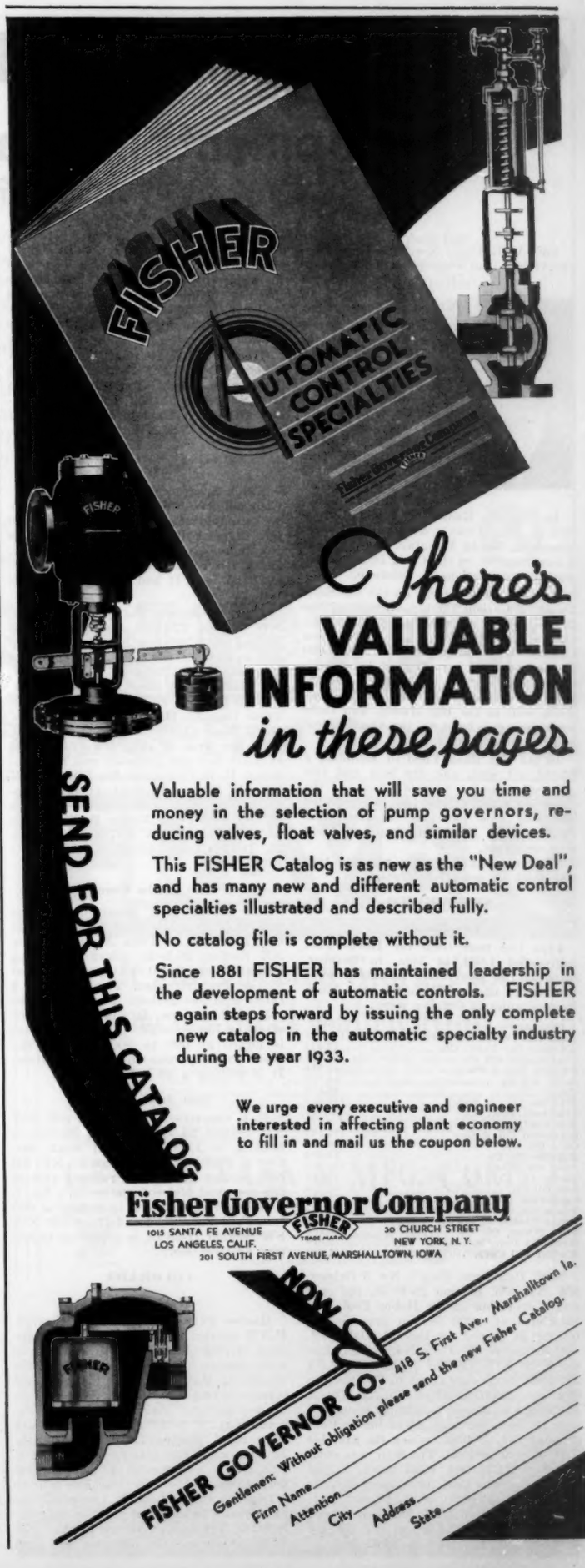
One Colorado County wildcat test was abandoned during the week and a new location was announced. The Columbus Development Co.'s No. 1 Miller, in the H.T.&B. Survey, was abandoned at a total depth of 5,216 feet. Weimar Development Co.'s No. 1 Janecka, in Henry Austin Survey, was a new location. This test will start spudding as soon as equipment and machine can be moved to this location.

R. J. Berry, Vice President, Ohio Oil Co., Succumbs to Heart Attack in Texas

FINDLAY, Ohio, Nov. 18. — Richard J. Berry, vice president of the Ohio Oil Co., and president of the First National Bank & Trust Co., died suddenly last evening at Fort Worth, Tex., of a heart attack. Mr. Berry, for many years a prominent figure in the petroleum industry, expired within 15 minutes. Death came in the home of a friend, J. Roby Penn, a former Findlay resident. Mr. Berry had left Findlay last Monday for a business trip to the Southwest. He had planned to leave Fort Worth last night for Tulsa. James C. Donnell II went to Fort Worth with Mr. Berry but was not in Fort Worth at the time of Mr. Berry's death.

RICHARD J. BERRY

Mr. Berry was president of the Mid-Kansas Oil & Gas Co. and also of the Illinois Pipe Line Co., subsidiaries of the Ohio Oil Co. He had been head of the Mid-Kansas company since 1916 and of the pipe line company since it was acquired by the Ohio several years ago. He also was president of the Ohio-Mexi-Co. Co. and vice president of the Western Public Service Corp. Mr. Berry had spent practically all of his adult life with the Ohio Oil Co. He came to Findlay in 1892 from Oil City, Pa., his native city, after having spent two years in the employ of the National Transit Co. Upon coming here he became stenographer to J. C. Donnell, late president of the Ohio Oil Co., which had only been organized five years previous to Mr. Berry's employment. In 1906 he was elected a director of the Ohio Oil Co. and in 1923 was named vice president. He was born in 1873 in Oil City, Pa. He was a son of Mr. and Mrs. Jason Berry. In 1902 he was married to Miss Marie Dodge of Columbus, who survives. A son, Richard, was accidentally killed a number of years ago.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Overland Dome Test Has Oil Standing in Hole; Developments in Washington and Oregon

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Nov. 20.—Runs from the Hobbs Pool since proration began to October 30, aggregated 37,945,302 bbls. Shell Petroleum Corp. has a completion in the Hobbs Pool, this being the only active operation. Lockhart and others' No. 2 Root, in Eddy County, will be abandoned. A Pennsylvanian test in Rio Arriba County had a show of oil at 730 feet.

In Colorado, Ramsey Petroleum Corp.'s test in Weld County does not look very promising. Rocky Mountain Gas Co. made a new location on the Craig Dome. There were no completions in Colorado.

An important wildcat on the Overland Dome in Carbon County, Wyoming, has 2,000 feet of oil standing in the hole. Ohio Oil Co.'s No. 2 Hazlett, in Carbon County, was completed for 20,000,000 feet of gas per day. Mutual Oil Syndicate made a new location on Dutton Creek. Continental Oil Co. completed an 8-bbl. well in the Big Muddy, and there were two dry holes in the Osage Field and one new location.

In the Cut Bank Field in Montana, a 15-bbl. oil well, one dry hole and two gas wells, one for 8,800,000 feet and the other for 6,100,000 feet, were completed and two new locations reported. One small well in the Kevin-Sunburst Field was completed.

Washington and Oregon reported routine work on several wildcats.

NEW MEXICO

Lea County

Pipe line runs from the Hobbs Pool aggregated 1,034,544 bbls. in October, bringing the total since proration went into effect up to 37,945,302 bbls. Runs by companies in October were:

Company—	Bbls.
Amerada Petroleum Corp.	101,313
Atlantic Oil Prod. Co.	13,310
Continental Oil Co.	87,341
Empire Gas & Fuel	37,011
Getty Oil Co.	32,715
Gypsy Oil Co.	82,824
Humble Oil & Ref.	110,527
Landreth Prod. Co.	11,817
Mid-Continent Pet. Co.	2,572
Stanolind Oil & Gas	173,565
Ohio Oil Co.	49,194
Repollo Oil Co.	12,430
Shell Pet. Corp.	139,419
Skelly Oil Co.	18,554
Sun Oil Co.	31,014
California Co.	21,515
Texas Co.	41,727
Texas-Pacific C. & O.	16,816
Tide Water Oil Co.	46,667
Magnolia Pet. Co.	2,570
Walker Oil Corp.	1,643

Shell Petroleum Corp.'s No. 3 Grimes, SW NE SW Section 28-18-38, the only active operation in the Hobbs Pool, was completed at 4,200 feet in lime, and is testing. It topped the lime at 4,004 feet.

Continental Oil Co.'s No. 2 McCallister A-24, NW NE NE Section 24-26-36, Jal Pool, is pinched down to 75 bbls. per day, the quantity which Humble Oil & Refining Co., agreed to take as a compromise between 100 bbls. asked for by Continental and 50 bbls., which the Humble first offered to take. The well was completed at 3,236 feet, total depth. Initial production was 564 bbls. per day. It topped the anhydrite at 1,165 feet, bottomed the salt at 2,775 feet and topped the brown lime at 2,820 feet and the pay at 3,230 feet. Elevation is 2,942 feet.

Western-Anton's No. 1 Conditt, C SW SW Section 12-25-36, which has been blowing around 15,000,000 feet of gas per day, installed a new master gate and the hole bridged 193 feet from the top. The crew will attempt to drill out the bridge.

Humble Oil & Refining Co.'s No. 3-A Lindley, C NW SW Section 13-25-36, is waiting on cement after setting 8⅝-inch at 2,850 feet with 650 sacks, and Southern Petroleum Exploration Co.'s No. 1 Ascarate, C NE NW Section 24-25-36, has rig up.

Eddy County

Ralph Spearow and others' No. 1 McClelland, SW NW NE Section 22-22-23, western Eddy County, is drilling at 4,250 feet in black lime. Stovall & Marshall's No. 1 Mock, C SE SE Section 29-24-27, Black River district, had a crooked hole at 1,165 feet. It had water at 1,039-52 feet.

Harry Leonard's No. 9 State, SE cor. NW Section 22-17-29, Jackson area, is drilling at 2,560 feet in gray lime, and had a show of gas at 2,267 feet and a show of oil at 2,392 feet. Western Drilling Co.'s No. 2-A Green, C SW NE Section 29-17-29, is drilling at 2,580 feet in white lime. C. H. Lockhart and others' No. 2 Root, C SW SW Section 7-17-30, Maljamar area, is shut down for orders at 3,518 feet and probably will be abandoned. R. D. Compton's No. 6 State, SW NE SW Section 15-16-23, upper Cottonwood district, is underreaming 8¼-inch at 550 feet. Pecos Valley Drilling Co.'s No. 1 McIntyre, NW NW Section 27-23-25, Dark Canon district, is drilling at 1,023 feet.

Rio Arriba County

One of the most important wildcats drilling in New Mexico is Pan-States Oil Co., Ltd.'s No. 1 Tiera Amarilla grant, NE Section 26-3s-1e, which is making hole at around 1,000 feet in a rotary test to the Pennsylvanian. The rig is in a canon and the Dakota outcrops on the side of this canon. It had a good show of oil at 730 feet. The Todilto sandstone is logged at 600 to 900 feet and the show probably was in that formation. It is drilling a 19-inch hole.

San Juan County

R. C. Oswell's No. 4 Permit, SW NW NW Section 34-30-11w, Aztec district, is reaming at 1,000 feet, total depth. McCoy & Phillips' No. 1 Martin, NE SE NW Section 34-30-11, is running pipe at 938 feet, and Meier & Culberson's No. 1, S NE Section 32-30-11, is drilling at 625 feet. Fred Barrett's No. 1 Hart, SW NW SW Section 11-29-11, is preparing to run pipe at 1,440 feet.

COLORADO

Weld County

Ramsey Petroleum Co.'s No. 1 Scriven, C NW Section 22-7n-59, Buckingham district, drilled out plug with cable tools after recementing 7-inch on top of the Muddy at 6,794 feet and the hole had been bailed to 5,600 feet without any oil or gas showing. Bailing to bottom was continuing. It looks as if the well will be a small producer at its best in the Muddy, while the opinion is growing it will not be commercial. It has not yet been announced whether the hole will be carried to the Dakota in the event the Muddy is a failure, but the fact that the location is lower on structure than No. 1 St. Anthony, the Ramsey gas well three-fourths of a mile to the northeast, is not encouraging for the deeper horizon.

Moffat County

Mountain Fuel Supply Co.'s No. 2 Florence Wilson, C NE NE Section 22-12n-100, Hiawatha Dome, which is plugging back from 7,577 feet, total depth, and testing sands on the way up, has completed repairs on rig which was damaged by fire two weeks ago and is perforating pipe at 3,600 feet to test gas sands in the Wasatch. Same company's No. 1 Wheeler, SE NW NW Section 30-12-100, is drilling at 1,945 feet after testing sand at 1,863 feet which made 540,000 feet of gas per day.

Rocky Mountain Gas Co.'s No. 2 Bogenschultz, SE cor. Section 9-6n-91, Craig Dome, is moving in rig from No. 1 Eberle, which was completed last week as a small gas well in the Morapas sand. Contract for the new operation went to Vaughn Drilling Co. It will be drilled with rotary to the gas sand at 2,800 feet. The location is 445 feet southeast of No. 1 Bogenschultz, the discovery well. The Eberle was 1,500 feet west of the discovery.

Rio Blanco County

The Texas Co. recently moved a separator from Craig to its No. 1 Potter, C NE SW Section 30-2n-96, White River Dome, for a 10-day test. This well reached a depth of 5,984 feet early in 1930, at which depth the drill stem was in the hole. Two and one-half inch tubing was run and a packer set at 5,454 feet to test everything below that point. A number of short tests were made and the hole finally made around 2,000,000 feet of gas and a little oil. In the last test reported it made 25 gallons of oil and 5 gallons of mud in a 18-minute test. It was then shut down indefinitely and is still listed as an uncompleted well. It built up a rock pressure of 1,720 pounds. The recent test is said to have shown little change.

Montezuma County

McElmo Oil Co.'s No. 1 West, NE NW NE Section 31-36-17, McElmo district, is drilling at 1,265 feet in sand and carrying 8¼-inch on bottom. It had a show of gas in the top of the sand followed by a hole full of salt water.

Las Animas County

Mountain States Oil Corp.'s No. 1 Nikola, C NE SE Section 10-34-63, Garcia district, is drilling at 710 feet.

Larimer County

Colorado Producers, Inc.'s No. 1 Foster-Motz, SW SE SE Section 17-4n-69, Berthoud district, which has been shut down for some time at 1,435 feet, is rigging to resume.

Huerfano County

S. W. Pressey's No. 1 Ojo, SW NE Section 10-29-69, Oak View, is shut down at 1,920 feet to install new boiler, following an explosion in the old boiler. It had a good show of gas in shale at this depth.

WYOMING

Carbon County

A wildcat attracting considerable attention is Earl W. Reeder, Inc.'s No. 1 Union Pacific, C SW SW Section 19-20-83, Overland, or Pass Creek structure, which at 3,735 feet, total depth, has 2,000 feet of oil standing in the hole. This oil is supposed to be coming from the Mowry shale, which was topped at 3,565 feet. When the 8 and 10-inch casings were connected up, it was found that some gas was coming from between the strings. There are 20 feet of cavings at the bottom of the hole and cleaning out to lower the 6⅝-inch to the bottom is in progress. The next objective is the Muddy sand, expected within 150 to 300 feet. The oil is of 38 degrees gravity. Its presence in the Mowry is considered very promising for production in the Dakota series. The structure was geologized by E. W. Krampert and A. F. Barrett and is approximately 8 miles long and 2½ miles wide. Coredrilling developed a closure of 2,500 feet.

Ohio Oil Co.'s No. 2 A. J. Hazlett, NE cor. Section 34-23-79, Allen Lake structure, gauged 20,000,000 feet of gas per day from the Sundance sand at 2,110-79 feet. The hole was drilled about 300 feet below the sand and some water was encountered. A bridge was then set at 2,179 feet to shut off the water. Rig from this well is being moved back to the company's No. 1 Hazlett, NE NW Section 34-23-79, completed as a small gasser in the Morrison and it will be deepened from 1,710 feet to the Tensleep. It was intended to drill the second well to the Tensleep, but on account of the large flow of gas, it was decided to save it and make a deep test of No. 1. This operation is on a permit owned by A. J. Hazlett, editor of the Inland Oil Index, of Casper, a veteran writer on oil, and the oil men are universally pleased over the outcome in this test.

Mutual Oil Syndicate's No. 9 Dutton Creek, NW NE Section 12-18-78, Dutton Creek, cemented 6⅝-inch on top of the Muddy sand at 4,844 feet and is standardizing to drill into the sand. The cores showed 25 feet of saturated sand. Rotary is being skidded for same firm's No. 9-X E NW NE Section 12, for a well to the Shannon gas sand.

Producers & Refiners Corp.'s No. 4 Wertz, SW cor. SE Section 7-26-89, Wertz Dome, ripped and pulled 6¼-inch from 2,820 feet, cemented whipstock at 2,700 feet, and has started drilling by junk in the hole. Total depth is 3,541 feet.

Uinta County

Sackrider & Spaulding's No. 1 Union Pacific, C NW NE Section 28-15-117, Meridian district, is drilling at 1,570 feet with a hole full of water.

Hot Springs County

Empire State Oil Co.'s No. 4 Republic, NE cor. NW Section 14-44-98, Hamilton Dome, is drilling at 2,500 feet. Sand in the Chugwater at 2,130-56 feet had a show of oil with water.

Park County

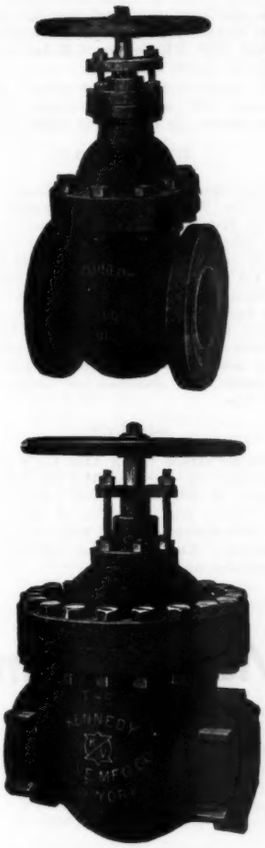
Resolute Oil Co.'s No. 1 State, C NW SW Section 16-57-101, Badger Basin, is drilling out plug after cementing 9⅝-inch at 3,608 feet. V. M. Kirk's No. 1 Government, SW cor. Section 24-58-98, Frannie Dome, set the 8¼-inch at 2,675 feet and is changing over from rotary to cable tools. The top of the Embar was found at 2,654 feet and the top of the Tensleep is expected at 2,714 feet.

Natrona County

Midway Oil Corp.'s No. 1 Boyer, SW NE NE Section 23-35-79, Midway Dome, is drilling at 4,675 feet.

Converse County

Continental Oil Co.'s No. 30 Glenrock Sheep, SW SE SE Section 4-33-76, Big Muddy Field, is pumping 8 bbls. per day



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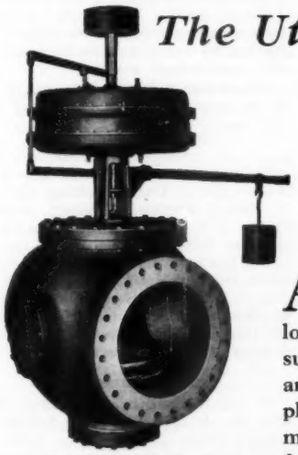

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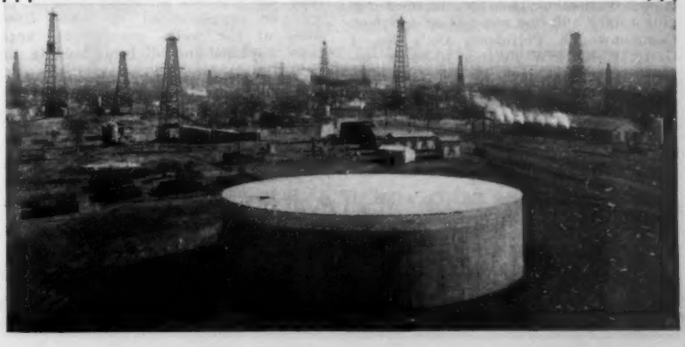

from the Dakota at 4,234 feet. It was plugged back from 4,767 feet, the Sundance and Lakota being productive.

Niobrara County

Interstate Oil & Refining Co.'s No. 1 Morrell, NW NE SE Section 2-39-61, West Mule Creek, is bottomed at 2,268 feet and has moved boiler back and enclosed rig and is preparing to underream the 6⅝-inch to shut off a flow of 2,000,000 feet of carbon dioxide gas. J. M. Huber Corp.'s No. 1 Joss, NE NW NE Section 6-35-65, Lance Creek, has the bit in the hole at a total depth of 3,433 feet. Gas at this depth is estimated at 2,500,000 feet per day.

Weston County

Albert Jones' No. 5, SW NE Section 21-46-63, in shallow district of the Osage Field, was dry at 440 feet, total depth, and Riggs Oil Co.'s No. 3, SE NE Section 16-46-64, missed the Muddy and is shut down at 3,300 feet. It may be drilled deeper. A new location is Yellowstone Oil Co.'s No. 5, NW cor. Section 23-46-64. Rig is on location. Federal Oil Co.'s No. 6, SE SE Section 15-46-64, is rigging up.

Crook County

Dr. B. R. Kinter and others' No. 1 Rockford-Wyoming, NE SE Section 13-52-62, Rocky Ford district, pulled the 8¼-inch and is straightreaming at 400 feet, total depth.

MONTANA

Glacier County

Nyhagen-Bell's No. 1 Anderson, SE NE SW Section 26-35-6w, Cut Bank Field, which is along the trend of the productive area, was a disappointment and swabbed only 25 to 30 bbls. in a 48-hour test. It is estimated at 20 bbls. on the pump. Total depth is 2,870 feet. The Darling was at 2,836-50 feet, and the Ellis at 2,850-70 feet. The 6⅝-inch was cemented at 2,803 feet with 12 sacks. There was only 14 feet of the Darling and it was hard and tight.

Montana Power Gas Co.'s No. 1 Teterud, near center W half, Section 2-35-5w, was completed at 2,752 feet for 8,800,000 feet of gas per day. The Darling was cut at 2,694-2,745 feet and the 6⅝-inch was cemented at 2,695 feet.

Montana Power Gas Co.'s No. 1 Miller, SW NE NE Section 4-35-5w, was completed at 2,852 feet for 6,100,000 feet per day from the Darling at 2,843-52 feet.

Steele Creek Producers, Inc.'s No. 1 Carman, C NW NW Section 19-34-5w, also known as R. C. Tarrant's No. 1 Carman, was a disappointment, and at 2,800 feet, total depth, had 125 feet of fluid in the hole. The Darling was at 2,768-72 feet and the Ellis at 2,772-2,800 feet. It will be allowed to stand for a week or two to see if there is any change. If not, it will be abandoned. The sand had thinned at this location to only 4 feet. It is an east offset to Tarrant's No. 1 Miller, which flowed 450 bbls. per day initial and was one of the best wells in the field, and a south offset to Tarrant's No. 1 Hope, which was only a 10-bbl. well.

Two new locations were reported in Alberta-Pacific Consolidated Oil Co.'s No. 3 Keisel, NW cor. Section 11-34-6w, and the Santa Rita Oil & Gas Co.'s No. 3 Tribal, C NW NW Section 15-35-6w.

Alberta-Pacific's No. 3 Matson, SW NW SW Section 14-34-6w, finished rigging rotary and has resumed at 148 feet. Commonwealth Petroleum Co.'s No. 1 Getty, C NE SW Section 15-34-6w, cemented the 10¾-inch at 637 feet with 40 sacks and is drilling at 1,140 feet. Lon Crumley's No. 1 Billedeaux, NW SE Section 27-35-6w, is drilling at 1,900 feet. Dunstall and others' No. 1 Kennerly, E NE NW Section 22-34-6w, is moving in equipment.

The Montana Power Gas Co.'s No. 1 Haines, C SE Section 20-35-5w, is drilling at 1,650 feet, and its No. 1 Seeba, NE cor. NW Section 2-34-6w, is drilling at 1,170 feet. Par Oil Co.'s No. 2 Haines, SE cor. SW Section 2-34-6w, is drilling at 2,400 feet.

R. C. Tarrant's No. 2 Britton, SW NW SE Section 14-34-6w, is running the 8¼-inch at 2,360 feet, and his No. 2 Haglund, Sr., C NW NW Section 13-34-6w, is drilling at 340 feet. Tarrant's No. 4 Haglund, Jr., C SE SE Section 13-34-6w, is drilling at 1,560 feet, and his No. 2 Miller, C SW NE Section 24-34-6w, is drilling at 1,920 feet. Tarrant's No. 1 Winkler, C SW SW Section 23-35-6w, is drilling at 2,060 feet.

The Texas Co.'s No. 1 Fisk, C NW NE Section 14-35-6w, is moving in rig to clean out and test. It has been standing at 2,950 feet after plugging back from 2,981 feet, with some oil and water in the hole. Same company's No. 1 Haggerty, SE cor. Section 9-34-6w, is working on water well. Its No. 1 Hinkle, NW cor. NE Section 2-34-6w, is drilling at 2,782 feet, and had a show of gas at 2,760 feet. The Texas Co.'s No. 1 Yunck, NW SW Section 14-35-6w, is waiting for rotary at 158 feet, and its No. 1 State, C NE Section 16-32-5w, is running the 10-inch at 647 feet.

Carbon County

Corrected reports on Carbon Oil & Gas Co.'s two wells on the Dry Creek Dome are as follows: No. 1 Armstrong, SW cor. NW Section 7-7s-22, plugged back from 5,718 feet to 5,400 feet and redriled to 5,585 feet, where it cleaned out and swabbed a little oil with water. It was then deepened to 5,620 feet and cemented the 8¼-inch. No. 1 McMinn, NW SW SW Section 7-7s-22, which has been confused with the above well, has not made any change since the rig burned several months ago and is standing at 5,551 feet.

Petroleum County

Minnesota-Flatwillow Oil Co.'s No. 1 Post, NW NE NE Section 8-15-29, Cat Creek Field, which had water at 1,565-70 feet, in the first Cat Creek sand, will be abandoned.

Liberty County

Harold Hayes and others' No. 1 Strode, Section 3-36-4e, Sweetgrass Hills, is drilling at 278 feet. Location is 5 miles southwest of the Whitlash district. J. H. Hamilton and others' No. 1 Northern Farms, C NE SW Section 10-37-5e, is drilling at 300 feet.

Fergus County

Guy Smith and others' No. 1-A, SE SE Section 3-13-26, Flatwillow district, is drilling at 300 feet. Rig was skidded 100 feet south from No. 1, which lost hole at 1,325 feet.

Toole County

Rocky Ridge Syndicate's No. 1 Haugen, SE cor. NE Section 11-35-3w, Kevin-Sunburst, was completed at 1,760 feet in the Sunburst sand for 40 bbls. after a shot with 50 quarts. Mickener & De-Groat's No. 3, C SE SW Section 10-34-2w, is fishing for bit at 1,420 feet. Pat Sweeney's No. 1 Wahl, C SE NW Section 26-35-1w, recovered lost bit and is shut down at 1,360 feet. McClure's No. 1, SW NW NE Section 4-35-1w, is shut down at 1,420 feet.

C. Leonard Smith and others' No. 1 Mowat, SW cor. SE Section 7-33-2e, East Shelby, is drilling at 1,665 feet.

WASHINGTON

Northwestern Natural Gas Corp.'s No. 6 Walla Walla, C NE NE Section 29-11-26, Rattlesnake Hills, Benton County, has recovered drill stem and is preparing to resume at 1,235 feet. Prairie Forks Oil Co.'s No. 1 Rosalie, Section 9-28-13w, Clallam County, is resuming at 2,088 feet and will run casing and test a show of gas. Hoh River Oil Co.'s No. 2 Gilkey, Section 12-26-14, Jefferson County, is shut down for orders at 865 feet and probably will abandon on account of bad hole.

OREGON

Clarno Basin Oil & Gas Co.'s No. 1 Antelope, in Section 34-7-19, Wheeler County, is drilling at 3,400 feet in lime, and Valley Gas Co.'s No. 2 Alexander, SE NE Section 36-6-5, Polk County, is spudding. No. 1, Section 14-7-5, was abandoned at 1,360 feet.

South Turner Valley Test Gets Madison Lime Considerably Higher Than Anticipated

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM Ontario, Nov. 18.—Oil deliveries from the Turner Valley Field for October showed a marked increase, totaling 79,272 bbls. compared with 68,666 bbls. in September. The October figures show deliveries of 71,080 bbls. to Imperial Oil Refineries, Ltd., including 53,090 bbls. of discolored naphtha, 11,914 bbls. of clear naphtha and 6,076 bbls. of light crude oil. This compares with 61,350 bbls. in September, which included 42,324 bbls. of discolored naphtha, 14,969 bbls. of clear naphtha and 4,057 bbls. of light crude oil. Deliveries to the Bell Refining Co. for October totaled 8,192 bbls. compared with 7,316 bbls. in September.

The 1933 deliveries to the end of October totaled 592,064 bbls., compared with 608,355 bbls. in the same period of 1932. Deliveries have, however, shown an increase in the latter part of the current year, and it is estimated the 1933 total will reach 750,000 bbls. against 689,606 bbls. The peak production in 1930 amounted to 1,312,695 bbls. To reach the actual total production from the field, the reported deliveries to refineries will be supplemented by large direct sales at the wells, considerable unrefined naphtha and oil being sold in the field.

Since the field became a naphtha producer in 1924, the production including the estimated total for 1933, amounts to 6,118,449 bbls., valued at approximately $19,900,000.

South Test Gets Lime

In Section 28-18-2s5, South Turner Valley, Becker Syndicate's No. 2 Anaconda, LSD 15, got the Madison limestone at 5,080 feet and cemented 8-inch casing in the lime at 5,100 feet. Boilers are being moved back and control head and separators installed preparatory to drilling into production. The lime was encountered much higher than anticipated, and at a considerably shallower depth than in the nearby producers, Merland Oil Co.'s No. 1, Mar Jon-Freehold's No. 1 and Sterling Pacific's No. 2, indicating No. 2 Anaconda is on the high point of the structure. The test got a reported production of 10,000,000 feet of gas in the Dalhousie sand, with a small show of oil.

Oil Well Fire

In the same section, Pacalta Oils' No. 1, LSD 7, caught fire, the derrick, drill house and boiler house being destroyed and the machinery damaged. The hole is reported down 3,230 feet and was found in good shape. Rebuilding will start at once. The test got a small crude oil production at 2,880 feet with a little gas.

Mar Jon Oil Co.'s No. 2 Kindersley, LSD 10, Section 28-18-2w5, is drilling below 4,092 feet close to the Home sand and is reported logging higher than anticipated. Publix Oil & Gas Co.'s No. 1, LSD 8, same section, is straightening crooked hole below 1,310 feet. Test was originally drilled to around 1,750 feet. Sunburst-Mid Royal's No. 1, LSD 14, is reported shut down at 1,630 feet, pending completion of Becker Syndicate's No. 2 Anaconda, a little to the northeast. Spooner-Oils' No. 5 Anaconda, LSD 1, same section, is at 1,230 feet and running 18⅝-inch casing.

Arranging New Test

Robert Wilkinson and associates of Calgary (Century Royalties, Ltd.) are reported arranging for a new test of Section 28-18-2w5, to be drilled 1,320 feet due west of Becker Syndicate's No. 2 Anaconda, in LSD 14. The test will be on acreage secured from Oil Royalties & Shareholders Corp. It is expected to spud in some time in December. This test will be the farthest west active drilling in Section 28, and will test the possibility of crude in the limestone on this side of the structure.

South Turner Valley

Sterling Royalties' No. 1, LSD 1, Section 33-18-2w5, is reported drilling in the poker chip shales below 4,956 feet and is expected to get the lime about 5,000 feet or less.

Livingston Syndicate's No. 1 Anaconda, LSD 5, Section 34-18-2w5, which has been standing cemented at 2,865 feet is hauling 10-inch casing. Drilling will probably resume next week.

Northwest Co.'s No. 2 Longview, LSD 5, Section 27-18-2w5, is drilling below 740 feet.

Far South Tests

In the far south end of the Turner Valley Field, Union Drilling Co.'s No. 1, LSD 8, Section 21-18-2w5, is drilling below 2,440 feet. The test encountered cardium bands between 2,385 feet and 2,400 feet and is thought to be in the lower Benton. Hoffar Lundy Syndicate's No. 1, LSD 13, Section 22-18-2w5, is drilling around 4,200 feet. Highwood Sarcee Oils' No. 1, NE Section 21-18-2w5, is drilling below 1,800 feet.

Central Turner Valley

In the Central Turner Valley, Okalta Oils' No. 4, LSD 8, Section 1-20-3w5, is drilling below 2,500 feet on a test for light crude in the horizons above the lime. The formation is standing up well, and casing has been left at 2,200 feet.

New McDougall-Segur Oil Co.'s No. 6, LSD 11, Section 12-20-3w5, finished in a sand at 3,155 feet as a fair producer of light crude, has been deepened. In the first stand the well started with a production estimated 50 bbls. or better. The crude was, however, a heavier product than the normal crude from the McDougall-Segur sand, being around 42 degrees, and in time the flow dropped off to less than 15 bbls. a day. The test has now been deepened 80 feet to 3,235 feet, encountering the true McDougall-Segur sand and the well is making about 80 bbls. a day. The new production is 44-degree crude. The upper producing horizon, previously identified as the McDougall-Segur, is apparently a stray sand.

West Side Test

On the west side of South Turner Val-

ley, Associated Royalties' No. 1 Spray, LSD 9, Section 5-19-2w5, is reaming and lowering casing to 3,350 feet. There has been considerable trouble experienced with crooked holes in the Turner Valley Field, due in part to the exceedingly hard formations encountered at various depths and the steep inclination of the structures.

Associated's No. 1 is the only test now drilling on the west side of the structure in the Mercury area, though farther south, in Section 8, several tests are thought to be on the west side. Miracle's No. 2, due south of Associated's No. 1, recently got crude oil in the lime, and the present test will further indicate whether or not this is a condition characteristic of the west fold.

Drilling in the Foothills

In the Oil City Field, southwestern Alberta, Oil City Royalties' No. 1 Patrick, Section 30-1-30w4, is reported drilling below 1,350 feet.

On the Moose Mountain structure west of Calgary, Graystone Consolidated's No. 2 Signal Hill, LSD 9, Section 34-23-5w5, has shut down for the winter after redrilling with larger hole to 1,710 feet where casing was cemented.

In the forest reserve area west of Olds, Hunter Valley Oil Co.'s No. 1 McLaren, Township 31-10w5, is straightening crooked hole after cementing back to 1,880 feet. Original hole bottomed at 2,430 feet.

Border Fields

On the Twin River structure south of Lethbridge, Nordon-Roney's No. 2 Twin River, LSD 11, Section 2-2-20w4, is cleaning out after cementing.

On the Alberta end of the international Reserve Dome structure, Rialto Oils' No. 1, LSD 4, Section 15-1-9w4, is reported making new hole after setting 10-inch casing at 1,925 feet.

Wainwright Operations

In the Wainwright Field, east central Alberta, D. W. Beaubier has purchased the Leo O'Reilly tract and is moving drilling equipment from the Santee farm where a test of the Wainwright sand will be drilled. A producing well already completed on this property will furnish fuel. The new test is understood to be the first of a number that may be drilled by the Beaubier interests.

Saskatchewan Test

In southern Saskatchewan, Pine River Petroleums' No. 1, LSD 8, Section 23-12-24w2, on the Dirt Hills structure is reported drilling below 2,500 feet.

Drilling in Ontario

In the Dover Field, Kent County, Ontario, Ajax Oil & Gas Co.'s No. 6, Antaya farm, SE Lot 1, Concession 4, Dover East, is reported drilling around 600 feet on a test of the Trenton limestone. The Prairie Oil & Gas Co.'s No. 2, Stephens farm, Lot 2, front concession, Dover East, is reported rigged up ready to spud in. This also is a Trenton test.

In the southern part of Kent County, Ralph Dawson is drilling for the Southern Ontario Gas Co. east of the main Tilbury Field, near the Raleigh-Tilbury Township line, about midway between Merlin and Lake Erie, and about three-quarters of a mile on the east of Raleigh side.

Oil Show in Dawn

In the Dawn Field, Lambton County, Ontario, Union Gas Co.'s No. 68, SE SE Lot 25, Concession 2, Dawn Township, is standing at 1,965 feet. After getting salt around 1,600 feet the test was carried down, encountering only small shows of gas but a fair show of oil. The well has been shut in till spring.

In Essex County Bon Jasperson's No. 1, Lot 14, Concession 2, Maidstone Township, is drilling in the Trenton limestone around 2,800 feet.

Important Wildcat

An important new wildcat is being started in the west end of Elgin County by the Union Gas Co., its No. 1 Aldborough in Lot D, Concession 10, Aldborough Township, not far east of the Kent-Elgin County line. The location is in a previously untested area, north and a little east of two wells drilled last year by F. H. Stover & Son of Chatham for the Vacuum Gas & Oil Co. of Toronto. Vacuum's No. 5 in Lot 53, North Talbot Road, Orford Township, got two gas pays in the Salina formation below 1,580 feet, making around 20,000 feet a day, but was plugged. Vacuum's No. 5 was drilled about 3,500 feet south in Lot 53, South Talbot Road, and got a small gas show around 1,535 feet.

The gas shows were regarded as indicating a possible gas field between the Tilbury and Raleigh Fields in Kent County and the Vienna and Richmond Fields in eastern part of Elgin County. Gas was apparently met in one of the horizons which proved productive in the Tilbury Field. The second Vacuum test apparently proved there was no field south, toward the lake, and the present Union test will determine if the field lies to the north and east.

Port Lambton Prospect

In Sombra Township, Lambton County, D. O'Leary and associates of Toronto have leased approximately 1,000 acres close to Port Lambton and are reported arranging for the drilling of two tests. This area is some miles west of the Dawn Field. Recent drilling farther east in Sombra Township has indicated a pronounced dip of the formations west of the Dawn Field, but surface indications of gas in the immediate vicinity of Port Lambton and Sombra have been known for many years, and a local rise in structure is thought possible.

New Allowables for Large Texas Fields

AUSTIN, Tex., Nov. 18. — Following are new allowables and changes from previous allowables, for Texas oil production, made effective by the railroad commission at 7 a.m., November 15:

District—	No. of wells	New allowable
Panhandle	1,977	42,000
North Texas	14,927	56,500
West Central Texas	7,742	25,000
West Texas	3,016	119,848
East Central Texas	923	43,911
East Texas	11,308	394,000
Gulf Coast	2,853	142,056
Southwest Texas	4,385	45,097
Total	47,131	868,412

No change was made in the Panhandle, North Texas, Central Texas, or East Central Texas Fields. East Texas was cut 12,574 bbls.; West Texas, 2,365 bbls.; Gulf Coast, 1,938 bbls., and Southwest Texas, 626 bbls.

Kansas Fields

(Continued from Page 45)

Kansas City lime at 2,575-95 feet. It was completed.

Bar-Key Petroleum Co. was rigging up machine for No. 1-A Swanson, C NE Section 6-26-2e.

Kingman County

Skelly Oil Co.'s No. 2 North Miles, CWL SE Section 19-27-10w, Cunningham area, Kingman County, was completed. It tested 373 bbls., flowing, in 24 hours and 292,000 feet of gas.

Skelly Oil Co. has ponds dug for No. 4 F. C. Miles, 420 feet south and 1,320 feet west of NE cor. Section 30-27-10w.

Skelly Oil Co. had a showing of oil and water at 3,410-15 feet and drilled to 3,423 feet in No. 2 Ratcliff, CSL NW Section 30-27-10w.

MILTON J. BROOKS DIES

Milton J. Brooks, head of the real estate department of the Standard Oil Co. of New York, died November 13 at his home in Mount Vernon, N. Y. Mr. Brooks had been in the employ of the Standard Oil Co. of New York since 1927. Previously he was a consulting engineer in Poughkeepsie, N. Y.

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Michigan Appeals for an Increase in Allowable, With Possible New Field in Ogemaw County

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MOUNT PLEASANT, Mich., Nov. 18. A formal appeal for an increase over the 30,000-bbl. allowable which has been in effect in Michigan since it was announced the latter part of August under the NRA code has been forwarded to the regional headquarters at Findlay, Ohio, this week by the Michigan Oil Proration Committee. Michigan's request for an increased allowable is based on an increase in the daily potential from about 25,000 bbls. when the figure of 30,000 bbls. a day was set to a present potential of about 80,000 bbls. a day.

Through the careful work of the new proration committee, Michigan production has not exceeded this allowable for the two months of September and October despite the rapidly increasing potential because of new record wells brought in by continued drilling in such flush areas as Porter and Vernon Townships in the Mount Pleasant area of Central Michigan.

Only by continually making the percentage of proration more drastic, starting with 45 per cent with continuing downward revisions to the present allowable of 20 per cent for all production over 100 bbls. a day, has it been possible for Michigan to keep within the allowable.

With a possible important new field just opening up in Ogemaw County and other developments, the Michigan committee this week decided to take action in behalf of the operators of the Wolverine state who to date have shown a remarkable degree of co-operation along a line entirely new to the state.

James C. Graves, of Saginaw, chairman of the Michigan committee, issued a statement with the filing of the application for an increased allowable in which he declared that the present low allowable is "out of proportion to the potential production as compared with the schedules in other states."

He also called attention to Michigan's large consumption of petroleum products declaring that while Michigan "has no desire to injure the oil producers of other states, it would seem that the natural resources of the state should be utilized to the utmost in meeting the demands for petroleum products within the state in which they are produced."

It is on this basis that Michigan operators through their proration committee are hoping for consideration by regional oil code officials at Findlay, Ohio, and by Federal officials in Washington.

Members of the Michigan Proration Committee are: Chairman, James C. Graves; vice chairman, Howard D. Atha, of Mount Pleasant; secretary, Edward F. Claggett, of Saginaw; George B. Talbot, of Saginaw; Charles A. Maguire, of Mount Pleasant; George H. Fink, of Pittsburgh, Pa., and Mount Pleasant, and W. A. Hower, of Muskegon.

Thirteen Completions

There were 13 completions in Michigan this week, including 11 oil wells in four different fields, 2 dry holes and a third well possibly dry, seven wells drilling near pay sands, three shut down just above Dundee pay sands and three drilling within a few hundred feet of the casing point. The 11 new oil producers had an aggregate initial flow of 2,525 bbls. a day, while three wells treated with acid increased 1,175 bbls. in daily production, a combined total of 3,700 bbls. of new production in four fields.

As has been the case for the past 10 weeks, Porter Township of Midland County led the State with five new oil wells and the three increased by acid treatment.

One of the larger new oil producers was Pure Oil Co.'s No. 1 W. W. Hoyt, NE SE SE Section 17-13n-1w, which came in making 700 bbls. in the Dundee pay sands. Davis Oil Co.'s No. 3 H. Neitzke, SW NW NW Section 21, a direct east offset to Pure company's No. 1 Bond-Risley, a 3,000-bbl. well recently completed, made 750 bbls. natural in the Dundee.

Stork Oil Co.'s No. 3 James C. Hill, NW SE NE Section 22, made 80 bbls. while the same company's No. 2 C. E. Baxter, SE NW NE Section 22, made 130 bbls. a day. W. J. Wilson's No. 2 William N. Carter, SW NE SW Section 18, made about 100 bbls., a total of 1,760 bbls. for the five.

Branigar, Giffert & Reasor's No. 1 A. Bernard, N SE SE Section 8-14n-2w, Greendale Township, Midland County, made 500 bbls. after acid treatment, coming in as a 100-bbl. well in the Dundee. It flowed 300 bbls. in 15 hours. J. W. Leonard's No. 1 Woern, NW NE SE Section 15, also Greendale Township, had 1,000 feet of oil in the hole and will be treated with acid.

Mammoth Petroleum Co.'s No. 1 William and F. J. Marseilles, SE NW SE Section 23-16n-4w, Vernon Township, Isabella County, was the largest of new oil producers in this field, making 100 bbls. a day in the Dundee. Mellon-Pollock Oil Co.'s No. 1 Leo Smock, NW NE NE Section 26, which struck the pay a week ago, was brought in for 25 bbls., while Mammoth Petroleum Co.'s No. 3 A. Thayer, SW NE SW Section 23, made about 40 bbls. after starting to drill in last week.

J. V. Wicklund's No. 1 William Marseilles, SW SW NE Section 23, struck bottom water after having a good show in the Dundee pay sand from 3,755 to 3,758 feet and will be plugged back to test. Gordon Oil Co.'s No. 1 McDonald-Bell, NW NW SE Section 25, which had a show of oil and gas but was dry in the Dundee at 3,781 feet, probably will be plugged back to 1,300 feet, where a flow of about 2,000,000 feet of gas was encountered in the Michigan series.

McClanahan Oil Co.'s No. 1 Densmore, NW NW SW Section 4-13n-1w, a Porter Township wildcat, was dry and abandoned in the Dundee after striking water at 3,536 feet. It had a show at 9 feet in. It is nearly 2 miles north of production.

H. C. Nelson's No. 1 Anna Copenhaven, SE NE Section 36-15n-17w, Hart Township, Oceana County, made 100 bbls. after acid treatment in the upper Traverse formation.

All hope for possible production in the Dapar Oil Co.'s No. 1 Tedam, SW SW SE Section 5, Emerson Township, Gratiot County, was abandoned after a show of oil 60 feet in the Dundee but nothing in commercial quantities as deep as 75 feet in.

Two wells were drilling into the upper Traverse as the week closed in the interesting new Ogemaw County area where the production of the first two producers on Alvin Webber's Wilcox lease was boosted to 900 bbls. a day by acid treatment. The combined flow had dropped to 220 bbls. before the second treatment. Both had been treated before.

One dry hole was drilled in West Branch Township last week on W. J. Sovereign's No. 1 Griffin, NW NW SW Section 29, located nearly 3 miles north and west of the discovery. Formations were 50 to 70 feet lower in this hole than in the discovery showing a sharp decline.

Wildcats Near Completion

Casing was to be set at about 2,200 feet in Kenlet and Flynn's No. 1 Branick in Section 9, Oregon Township, Lapeer County, where the Dundee is expected at about 2,400 feet.

Ichenberg Brothers' No. 1 Grass Lake Ranch in Section 7-16n-11w, Newaygo County, the oldest drilling well in the State, also is expected to case and drill into the Dundee next week after six years of intermittent operations. It was started in 1927 before the discovery well was drilled in the Muskegon Field.

New Permits

Nine state permits for new locations in seven different townships were issued this week by the conservation department. Two wildcats for which permits have been issued are James J. Spillane's No. 1 Lamon M. Russell, NW NW NE Section 24-12n-1e, Jonesfield Township, Saginaw County, and W. J. Bernier's No. 1 H. A. and H. D. Woodworth, NE SE SE Section 5-3n-4w, Benton Township, Eaton County.

James M. Taggart and others, who last week brought in their No. 3 well on the Robert S. Fish lease as the biggest gasser in the State, have made a new location half a mile north of the record gasser in the C SE NE Section 4-14n-9w, Austin Township, Mecosta County. No. 3 Fish made 27,500,000 feet of gas a day open flow capacity.

Crane Township Field, Wyandot County, O., Has Most of New Development Work

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Nov. 20.—Keiner and others' No. 7 on the Louisa Brandt farm, Section 34, Crane Township, Wyandot County, is a dry hole in the Trenton Lime from 1,395 to 1,445 feet. Most of the new development work is in Crane Township, Wyandot County. Pitt Oil & Gas Co.'s No. 1 on the A. E. Myers farm, Section 3, is shut down at 1,347 feet. Maesa Oil & Gas Co. is reported drilling below 1,100 feet in No. 2 on the Mary Sampson farm, Section 20, same township. Keiner and others are drilling below 350 feet in No. 2 on the Gotlieb Seiler farm, Section 34, same township. Crane Township Oil & Gas Co.'s No. 1 on the Frances Huffman farm is drilling below 800 feet. Jones & Coyle's No. 6 on the Margaret Brillhardt farm, Section 28, same township, is below 1,200 feet. Upper Sandusky Oil & Gas Co.'s No. 3 on the Mary Loverick farm, same section, is below 600 feet. Robert Kirk and others are drilling around 1,400 feet in No. 1 Joseph Coutard farm, Section 27, same township. Upper Sandusky Oil & Gas Co.'s No. 4 on the N. and H. Saltsman farm, Section 28, is near the Trenton lime at around 1,300 feet and Newcomer and others' No. 1 on the W. H. Castenein farm, in Section 11, Pitt Township, is shut down at 1,100 feet.

Simms Oil Co. is drilling below 1,360 feet on the Douglas Poe farm, Section 4, Roundhead Township, Hardin County.

Bosse Brothers are drilling around 500 feet on the M. and H. Bosse farm, in Section 18, Van Buren Township, Hancock County, north of North Baltimore.

C. A. and F. J. Peavy are drilling No. 2 on the Mary Steele farm, Section 13, Bath Township, Allen County. No. 1 on this farm, produced 7 bbls. initial a week or so ago.

CENTRAL OHIO

Fifteen completions were reported from the Central Ohio Field, three dry holes and 12 gas wells. A large number of wells is nearing the gas producing sands and many are just starting drilling. This is one of the busy fields east of the Mississippi River.

Stark County, the most active area of the Central Ohio Field, had three new completions. Brendel Producing Co.'s No. 1 on the Lawrence and Ethel Fritz farm, Section 10, Plain Township, is a nice gas well at 4,518-50 feet, the Clinton lime formation. Same company drilled in No. 1 on the Peter C. Graber farm, Section 12, same township, a gas well at 4,541 to 4,619 feet. Ohio Fuel Gas Co. drilled in a gas well in No. 1-5,751 on the Clara Warstler farm, Section 18, same township, at 4,429-56 feet. Kemrow Co. is drilling No. 2, on the Orchard Acres, Section 19, same township, and Brendel Producing Co. is drilling No. 1 on the Emos R. Methie farm, Section 8, same township.

In Lorain County, McMillan and others' No. 1 on the Frank Harrison farm, Section 6, Carlisle Township, is a gas well, and R. E. Cain's No. 1 on the Clarence Brooks farm, in Lot 100, in Russia Township, failed to find any sand. Wittmer Oil & Gas Co. is drilling on the George Myers farm, in Lot 86, Grafton Township, same county.

In Belmont County, R. W. Dunn and others drilled in a gas well in No. 1 on the Louis Gilham farm, Section 15, Union Township, in the Maxon sand at 1,137

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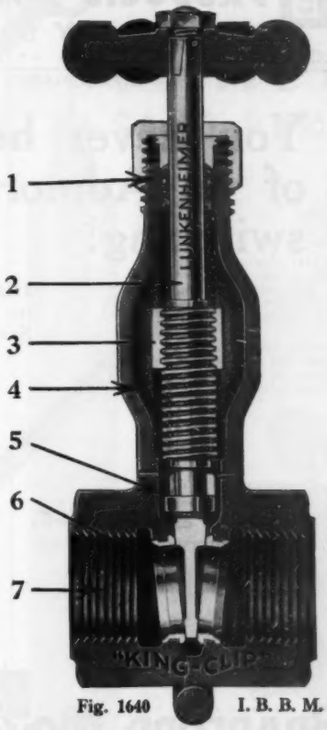

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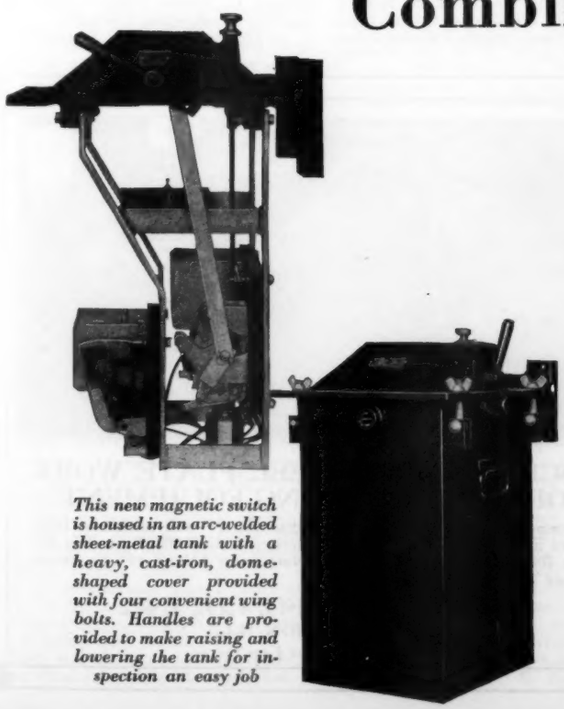

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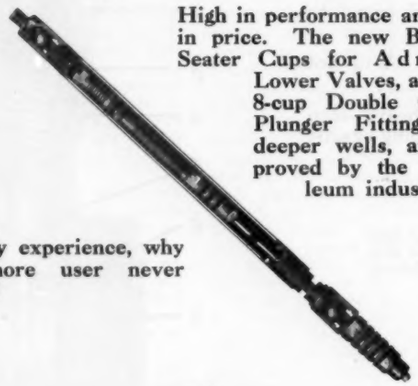

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The cracks were grooved with an air chisel, the ends drilled and tapped to prevent extension, and three 3/16-in. steel plates were shaped as covers, drilled for studs, and a center hole in each was tapped for ¼-in. pipe. After the studs were set, a mixture of Smooth-On was forced under the plates and into the cracks by attaching an Alemite gun to the center holes. After the repairs had stood 12 hours, additional Smooth-On No. 1 was forced in by a second application of the gun, to make sure that all voids between plates and shell were filled.

On starting up again, there was no sign of leakage and what was intended as a temporary repair has proven permanent with the additional benefits indicated in the head line.

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feet. Shorts Brothers and others are drilling on the G. A. Nichols farm, Section 15, same township, and Ohio Fuel Gas Co. is drilling No. 2 on the M. L. Bell farm, Section 16, same township. A. C. Peters and others' No. 5 on the Rosalie Johnson farm, Section 27, Somerset Township, is a gas well in the Berea sand at 1,912-24 feet.

Preston Oil Co. made a location for No. 1 on the C. A. Dague farm, in Lot 1, Leitchfield Township, Medina County.

In Fairfield County, Ohio Fuel Gas Co. has a rig in for No. 4 on the Homer Dupler farm, Section 12, Berne Township, and City Natural Works has a rig in for No. 2 on the Jesse Shull farm, Section 1, same township. Same company has a rig in for No. 2 on the James B. Feeman farm, Section 17, Pleasants Township, same county.

In Coshocton County, Murphy and others have a rig in for No. 2 on the Ward Little farm, Section 17, Perry Township.

In Licking County, Upham Gas Co. has a rig up for No. 1 on the Charles Babcock farm, Section 14, Fallsburg Township. Norpell and others are drilling No. 2 on the Rachael Fleece farm, same section. Settles Oil Co. is drilling No. 8 on the George W. Smith farm, Section 18, Perry Township, and McClay Brothers are drilling No. 5 on the Lyda Martin farm, Section 3, same township. In Mary Ann Township, same county, Ohio Fuel Gas Co. has a gas well in No. 1 on the Clement Keaser farm, Section 19. Armbruster & Strickler are drilling on the Homer L. Jones farm, same township.

In Athens County, C. W. Nuzum's No. 1 on the Pioneer City Building & Loan Co.'s tract, in Section 13, Berne Township, is at 740 to 760 feet. Carpenter & Glazier are drilling No. 3 G. E. Wyatt farm, Section 31, same township, and Carpenter & Glazier drilled a dry hole in No. 2 on the Pearl & Edna Ball farm, in Fractional Section 12, Ames Township, same county.

In Tuscarawas County, Gordon Oil Co. and others have a rig in for No. 3 on the Martha Carroll farm, Lot 32, Washington Township. Obermiller and others are drilling on the E. E. Schwartz farm, Section 4, Fairfield Township.

In Athens County, I. C. Robinson is drilling No. 4 on the Alvin D. Cline farm, Section 13, Lee Township. Matt Harris is drilling No. 2 on the Elmer Dille farm, Section 3, Wesley Township, same county. Goddard & Blosser are drilling No. 7 on the Joshua Morris farm, Section 31, same township. In Palmer township, Frank Russell is drilling No. 13 on the Cozzins-Martin farm, Section 14, and Martin Brothers are drilling No. 22 on the Ella Martin farm, Lot 1,078, same county.

In Guernsey County, Preston Oil Co. is drilling No. 6-1,531 on the J. O. Alloway farm, Section 10, Wheeling Township. E. C. Quillan and others are drilling No. 2 on the E. C. Quillan farm, same section. H. F. Muhlbock & Son drilled in a gas well in No. 6 on the W. L. Branigar farm, Section 16, Washington Township, at 1,165-70 feet. Wilber Keith completed No. 1 on the Ralph Foraker farm, Section 20, Willis Township, in the Berea sand at 1,463½ feet. Ferguson & Co. is drilling No. 1 on the Fred Foraker farm, same section.

Nearing Pay Sand

Brendel Producing Co. has five wells near completion: No. 1 on the H. L. Shrive farm, Section 10, Jackson Township, Midland County, is drilling below 4,200 feet; No. 2 on the Henry Huthmacher farm, 4,025 feet, in Section 11, same township; No. 1 Cora L. Clay farm, Section 21, same township, 3,800 feet; No. 2 on the Joseph H. McDowell farm, Section 16, Plain Township, 2,600 feet, and No. 1 L. C. Wood farm, Section 9, Plain Township.

East Ohio Gas Co. has four wells near completion in Stark County: No. 1 on the John Wyles farm, Section 3, Jackson Township, below 4,200 feet; No. 1 on the Ed and B. Styer farm, Section 10, Plain Township, 4,500 feet; No. 1 on the A. E. Hockwalt farm, Section 17, same township, 4,200 feet, and No. 1 on the Frank F. Deems farm, Section 18, same township, 2,700 feet.

Cable & Campbell's No. 1 on the Levi Stoner farm, Section 20, Plain Township, Midland County, is drilling below 4,200 feet.

Pfeiffer and others' No. 1 on the J. H. Schneider farm, Section 17, Plain Township, Midland County, is drilling below 4,100 feet. H. W. Hoover's No. 1 on the Hoover farm, Section 21, same township, is at 4,100 feet, and Hoover Development Co.'s No. 1 on the Hoover farm, Section 8, same township, is around 3,000 feet.

In Summitt County, East Ohio Gas Co.'s No. 1 on the Mrs. F. Snider farm, in Section 30, Green Township, is drilling below 3,800, and the same company's No. 1 on the F. N. Steiner farm, Section 18, same township, is below 3,700 feet.

In Tuscarawas County, Frey and others are drilling below 3,500 feet in No. 1 on the W. G. Notz farm, Section 3, Fairfield Township.

In Muskingum County, Atha Co. is drilling below 3,500 feet in No. 1 on the Grover C. Wilson farm, in the fourth quarter, Washington Township.

In Licking County the Emerald Petro-

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Evaporator shown in foreground is 10′ dia. with 1″ wall thickness. Temperature in feed section is 1100°F. in bottom section 800°F., and in top section 700°F. Pressure is 100 lbs. Note lower half of 10′ dia. tower and cone bottom for evaporator.

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leum Co.'s No. 2 on the Calvin Mossholder farm, Section 14, Fallsburg Township, is drilling below 2,600 feet.

In Coshocton County, Pure Oil Co. is drilling below 2,650 feet in No. 1 on the Arthur Eppley farm, Section 5, Clark Township, and Hulse Kuntz, Inc., is below 2,600 feet in No. 3 on the Rolla McKee farm, Section 17, Perry township, same county.

Mid-East Gas Co. is drilling below 3,300 feet in No. 3 on the Ludwin Flowers farm, in Section 14, Muskingum Township, Muskingum County.

KENTUCKY

Eight completions were reported from the Kentucky Fields, four producing oil wells, one gas well and three dry holes. The best completion was James C. Ellis' No. 2, 400 feet from the south line and 200 feet from the east line of the R. A. Richards, 65 acres, in the Crow Hill area of Hancock County, with an initial of 150 bbls. Ed M. Egg Oil Co.'s No. 3 in the southeast corner of the William House 120 acres, in the same pool, showed an initial of 5 bbls. Sand Petroleum Corp.'s No. 1 in the southeast corner of the Ulyss Bolling farm, in the Crow Hill area, of Hancock County, was dry, as was No. 1 well, 400 feet from the north line and 1,000 feet from the east line of the Jim Crowe farm, in the West Point area of Hancock County. Hupp, Duff and others' No. 2, 600 feet from the north line and 200 feet from the east line of the Tittle Keown farm, in the Crow Hill Pool, same county, was a dry hole. Same parties' No. 2 on the Tittle Keown farm was a gas well.

In Ohio County, Snowden-McSweeney Co.'s No. 2 in the northeast of the E. Hartford farm, in the Newton Pool, is a Jett sand well, with an initial of 18 bbls. at 368 feet. George Stewart and others' No. 4, 600 feet from the south and east lines of the E. C. Dunn farm, in the same pool, produced an initial of 15 bbls. from the Jett sand.

There were no completions in the Indiana and Illinois fields.

Interesting Test in Cambria County, Pa.; Low Water Hampers West Virginia

By STAFF CORRESPONDENT

PITTSBURGH, Pa., Nov. 20.—An interesting new test is being drilled in Cambria County, Pa., about 7 miles from Ebensburg. There the White Mill Oil & Gas Co. reached a depth of 3,160 feet in a test on the Adams estate, now owned by Bert and William Adams. In a sand, as yet unidentified but presumed to be the 100-foot sand, there was a light showing of gas estimated at 15,000 feet a day. The top of the formation was at 2,817 feet and extended to 2,870 feet.

The location of the Adams farm is on Route 422 between Belsano and Strongstown at a place called White Mill along the Cambria & Indiana Railroad. A definite syncline extends through the town of Ebensburg and the location chosen is north of that syncline and down the structure. Some years ago, another wildcat was drilled in that region, but about 2,000 feet south of the present location. It is stated that this test will be drilled down to the Speechley and if unproductive, then down to the Bradford series.

A severe cold wave, coupled with snow and ice, retarded operations considerably in the lower eastern fields in the past week. West Virginia has been hampered by a very low water supply in the outlying districts. Eight wells were completed of which four were gassers and four producers. The initial new production was 74 bbls.

WEST VIRGINIA

In Lost Run Pool, Clay district, Ritchie County, West Virginia, another well was completed. The Richards Farm Oil Co. completed its No. 5 on the Frank R. Ball farm in the Injun sand at a depth of 2,016 feet. It is making about 40 bbls. a day and is the smallest on that lease.

Another location has been made in this district. Thomas Davis and others are building a rig on the William R. Kibbie farm about 1,000 feet east of Boehm & Strickler's No. 5. This will probably find gas. Only two other wells are drilling at present. The Richards Farm Oil Co. has spudded in No. 3 on the Corlie Ball farm, offsetting the Satterfield No. 2, and Clifton Louden and others are spudding in on the S. E. Satterfield farm for No. 4.

Production from the total wells in this pool has declined to about 1,500 bbls. a day. The field has shown remarkable staying power and will remain of considerable interest since the failure of the test on the McGinnis farm and the possibility of a turn in direction of the Injun sand streak.

There was but one other completion in West Virginia during the week and it was a gas well. In Murphy district, Ritchie County, Wilson and Baker completed No. 24 on the Ritchie Mines in the Injun sand at a depth of 2,280 feet. It is a gas well showing for about 300,000 feet a day.

Drilling in West Virginia

In Tyler County, Ohio Oil & Gas Co. has placed a drilling machine on the Emerson Hill farm on McKim Creek in Meade district. In Union district, L. H. Hess and others have a rig completed for No. 4 on the L. H. Hess farm. In Pleasants County, Mackey Oil & Gas Co. has hauled in a drilling machine on the E. C. Owens farm, on the waters of Rock Run in Lafayette district. In this district, T. L. Shop has started drilling on the Homer Hess farm.

In Wetzel County, Browns Run Gas Co. has reached 1,200 feet in a second test on the James Marshall farm in Clay district. In Monongalia County, Manufacturers Light & Heat Co. is testing the sand in its No. 1 on the Henry Yost farm in Battelle district which is being drilled deeper and now at 3,560 feet.

In Cabell County no new operations were started. H. H. Baker Gas Co. has reached 1,335 feet on the Wolf and Oppenheim property in Guyandotte district. In this district, C. C. Wolfe and others are down 600 feet on the S. E. Vickers farm; Martin and Swanson are fishing for the tools at 1,940 feet on the Humphrey farm; Black and Sansom have completed a rig on the F. H. Holswade farm; Lusher Brothers are drilling at 1,630 feet on the Fessenmyer Brewery lot and R. H. Adkins and others have reached 1,800 feet in a second test on the E. H. Darnell and others' lease. In McComas district, Empire State Gas Co. is drilling at 1,500 feet on the Kenneth Adkins farm, and West Virginia Gas Corp. is down 1,600 feet on the Millie Ferguson farm.

In Boone County, Cambridge Gas Co. shut down for casing at 1,700 feet in No. 7 on the Roman Pickens farm in Scott district. In Washington district, the same company has been unable to proceed with No. 6 on the C. C. Lewis heirs farm on account of the lack of water. It had reached only 169 feet. In Sherman district, no additional report was had of the three Pure Oil Co. wells, the last depth being 2,327 feet in No. 60 on the Federal Coal Co. tract, and 2,804 feet in No. 62, same tract. The test on the A. M. Prichard farm is being drilled deeper from 2,963 feet. In Nichols County, Godfrey L. Cabot is fishing for the tools on the W. E. Smith farm in Jefferson district and at a depth of 1,646 feet.

In Roane County, W. B. Heeter is drilling on the Maude Knopp and others farm in Curtis district and has reached 475 feet. In this district Henderson Oil Co. has a location on the George L. Ball farm. In Smithfield district, Ohio Valley Gas Corp. shut down at 800 feet on the Josephine Young farm and is cementing.

In Gilmer County, C. W. McCall Drilling Co. and others have started drilling on the J. M. Taggart farm in Center district. In DeKalb district, Charles Despard has started drilling on the M. L. Amos and others lease. A. E. Ellis and others are ready with the materials for No. 3 and 4 on the Ware and Webster lease.

In Ritchie County, Carnegie Natural Gas Co. has a permit on the A. H. Tate farm in Union district. In Clay and Grant districts, John Deem is drilling at 1,800 feet on the C. M. Welch farm. In Murphy district, R. C. Jackson and others have rigged up on the D. Givens farm.

SOUTHWEST PENNSYLVANIA

Four wells were completed in Southwest Pennsylvania. One was a small producer, No. 3 of J. L. Garard & Co. on the John Sicklesmith farm in Dunkard Township. It was drilled in the Dunkard sand to a depth of 675 feet and is showing for 3 bbls. a day.

In Allegheny County, W. C. Wally completed a second test on his own farm on Lowries Run in McCandless Township. It was completed in the Salt sand and will make a fair gas well. In this district, F. P. Martin is drilling deeper his No. 1 on the Stumpf heirs farm and is down 1,700 feet.

In Greene County, Richhill Oil & Gas Co. drilled its second test on the Fred Baldwin farm in Richhill Township to 1,316 feet. The first gas sand was struck at 1,222-48 feet and gas at 1,227 feet. The second gas sand was found at 1,305 feet and gas at 1,316 feet. The well was shut down at that depth with a showing of 165,000 feet a day. In this township, Myers, Hoskinson and others are down 290 feet on the J. N. Clutter farm. In Greene Township, John Lantz is rigging up to drill a test on his own farm.

In Washington County, Naomi Oil & Gas So. reached a depth of 4,420 feet on the E. E. Daniels farm and shut down with no deep pay. In the Gantz sand at 2,250 to 2,285 feet, gas was found at 2,277 feet. In the shale at 2,688 feet there was another showing of gas. The total volume is about 157,000 feet with a rock pressure of 45 pounds. The well will be completed at this depth. In the same section, Ellwood Oil & Gas Co. is drilling at 2,230 feet on the Mansfield farm.

In Amwell Township, Washington County, the Carnegie Natural Gas Co. is down 230 feet on the Fred Baumberger farm and has the material on the ground on the C. W. Dunn farm. In Hanover Township, this company has reached 1,760 feet in drilling deeper its test on the J. C. Baim farm. In Fayette County, Carnegie Natural Gas Co. has reached 1,825 feet on the C. B. Wilkey farm in Jefferson Township.

SOUTHEAST OHIO

Completions continue few in Southeast Ohio but two being reported, one a fair test in the shallow sands in Medina County. In Litchfield Township Preston Oil Co. completed No. 1 on the Charles A. Dague farm in Section 1 in the Berea grit at a depth of 333 feet. It produced 20 bbls. the first day after shot.

In Morgan County, in the southwest quarter of Section 31, Deerfield Township, Ralston and Baynard drilled No. 17 on the J. J. McCarty farm. It was completed in the Berea grit at a depth of 1,330 feet and is showing for a half barrel pumper after shot.

In Licking County, in the shallow sand part in Mary Ann Township, Ohio Fuel Gas Co. is drilling on the C. Keiser farm. In Franklin Township, the Wehrle Co. is nearing the sand in a second test on the O. A. Kreager farm.

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California Situation Is Again Reported Serious; Marshall's Arrival Indicates Early Action

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., Nov. 20.—Failure of operators in several fields to reduce current production to the prescribed allowable and intensification of the destructive gasoline price war, which has been in progress during the past several weeks, has created a serious condition in California, and one that must be corrected in the immediate future in order to prevent a general breakdown. Failure to force compliance with the NRA code in the face of repeated statements for more than a month that such action would be taken, has had a tendency to discourage compliance with provisions of the code both with respect to production of crude oil and sale of refined products. Arrival of Howard Marshall, legal representative of the Petroleum Administrative Board, indicates the possibility of early action, although flagrant violators of the production code do not appear awed by his presence. The seriousness of the situation lies in the fact that unless immediate action is undertaken to force compliance with the code there will be a further general breakdown with respect to administrative features of the code.

The situation involving crooked hole drilling in the Seventeenth Street town lot area of the Huntington Beach Field has become so complicated by the injection of politics that one hardly remembers why state officials instituted litigation to prevent production of oil and gas from beneath state tidelands. Governor Rolph, after being visited by a committee of operators, promised to lend his efforts to bring about an early adjudication of the controversy at Huntington Beach, although he stipulated that operators must lay their cards face up on the table before he would take any action. Huntington Beach operators have been endeavoring to conclude litigation by paying the state a 5 per cent royalty, but officials have declined to entertain such a proposal because it will tend to validate crooked hole drilling and because they do not consider a 5 per cent royalty an adequate compensation.

Huntington Beach

Several substantial producers were completed in the Huntington Beach town lot area during the past week and a check of development work under way indicates the probable completion of several more during the next fortnight. The M. & H. Oil Co. successfully completed No. 1 Harris during the latter part of the week and this new well, bottomed at 4,785 feet, was brought in flowing 2,877 bbls. of clean 23.7 gravity oil per day. The Standard Oil Co. chalked up two new wells during the past seven-day period and should have No. 67-B ready for a production test within the next 10 days. The Standard's latest completions in the Seventeenth Street town lot area were No. 66-B, bottomed at 4,340 feet and finished with a 6⅝-inch liner carrying 733 feet of perforated, and No. 19 Pacific Electric, completed at 4,310 feet and finished with a 6⅝-inch liner carrying 718 feet of perforated. The former was brought in flowing 780 bbls. of 23.4 gravity oil and 760,000 feet of natural gas per day, while the latter was finished flowing 1,640 bbls. of clean 23.8 gravity oil and 1,595,000 feet of natural gas per day through a 1-inch bean under a pressure of 630 pounds. The Minnesota Oil Co.'s No. 1 Smith, bottomed at 4,868 feet, was brought in flowing 1,410 bbls. of 24.6 gravity oil cutting 5 per cent during the early part of the week but was subsequently pinched back to 305 bbls. per day. The 4¾-inch liner in this well froze 200 feet off bottom with the result that the lower portion of the hole is open. The 8⅝-inch water string was landed and cemented in No. 1 Smith at 3,958 feet. The Huntington Signal Oil Co.'s No. 8 Townsite in the Seventeenth Street section of the Huntington Beach Field registered an initial daily production of 1,760 bbls. from 5,100 feet before being beaned back to 315 bbls. per day.

Kettleman Hills

The Superior Oil Co. successfully completed No. 5 Huffman in the Kettleman North Dome Field during the early part of the current week, and this new well, bottomed at 8,682 feet, was brought in flowing at the rate of 10,000 bbls. per day. It subsequently built up to 11,890 bbls. of exceptionally clean 34.9 gravity oil and 1,300,000 feet of gas per day. This well was completed with a series of combination 7-inch liners and cleanness of the oil indicates that mechanical conditions were perfect. The three 7-inch combination liners landed in No. 5 Huffman were run in separately. The pipe was perforated at 8,671-82 feet, 8,310-8,487 feet, 8,062-8,190 feet and 7,522-7,942 feet. This gives the well a total of 736 feet of perforated pipe between 7,522 feet and bottom of the hole at 8,682 feet. These combination 7-inch liners were cemented through perforations at 8,669 feet, 8,307 feet and 8,057 feet. The Superior experienced a little difficulty with its first series of combination liners in the Kettleman North Dome Field but no trouble of any kind was experienced in the completion of No. 5 Huffman.

The North Kettleman Oil & Gas Co. is redrilling past the fish that has been holding up progress in No. 1 Lillis-Welsh, following an unsuccessful attempt to clean out the hole. No. 1 Lillis-Welsh, located in the extreme western end of the Kettleman North Dome structure, has been delayed for the past several months with mechanical trouble which developed after the well had reached a depth of 10,944 feet. Ed McAdams expects to approach the 11,000-foot level in No. 1 Lillis-Welsh within the next 60 days but may be obliged to land an additional string of casing unless he is successful in recementing the 7-inch casing landed at 9,638 feet. Early last week the company pumped in 120 sacks of cement under a pressure of 1,300 pounds but failed to put away as much as had been anticipated. After the drill pipe and tubing had been pulled the last 40 stands were found full of cement. A few days later the company pumped in an additional 35 sacks but failed to get any away. The company is at present drilling at approximately 9,700 feet, but does not expect to make any additional hole until a water shutoff test is conducted on the 7-inch as the water which prevented the completion of this well a few months ago is believed to have its origin at or above the shoe of the 7-inch water string. The Standard is grading location for two new wells in the Kettleman North Dome Field and both of these projects, No. 4-27-J and No. 58-27-J, are expected to get under way in the near future. The Standard has just concluded drilling operations on No. 65-1-P at 8,576 feet and this well is expected to be given a production test within the next few days.

The Kettleman North Dome Association is expected to complete No. 2-28-J and No. 56-8-Q within the next few weeks, as both projects are in the oil sand and nearing the completion depth. The association, despite the substantial reduction in allowable production of the Kettleman North Dome Field, contemplates increasing the scope of its drilling operations in the very near future. This increase in drilling is being undertaken in order to equalize gas pressure in certain sections of the North Dome. For some unaccountable reason, the Kettleman North Dome Field has failed to show the tremendous gas pressure which is evident in certain sections of the field after wells had been on production for a few months. It has become customary to inject natural gas into certain strategically located wells in the western end of the Kettleman North Dome Field in order to equalize pressure. The additional drilling contemplated by the Kettleman North Dome Association is being undertaken for the specific purpose of providing an additional supply of natural gas for injection purposes around the edge of the structure.

Mountain View

There was no great change in the status of drilling wells in the Mountain View Field of Kern County during the current week, but something definite should be determined with respect to the potentiality of the Logan Petroleum Co.'s No. 2 Wharton within the next few days, as this project has just been drilled out following the landing of an 8⅝-inch water string at 6,027 feet. The Bankline Oil Co.'s No. 1 Symons, located approximately 7,000 feet southeast of the Hogan Petroleum Co.'s discovery well, failed to come up to expectations on a production test at 5,946 feet and the company is sidetracking the liner preparatory to drilling ahead. The Barnsdall Oil Co.'s No. 1 Mott appears to be located off structure with the result that the company suspended drilling operations several weeks ago at 6,444 feet.

The most interesting feature in connection with the suspension of drilling operations on No. 1 Mott of the Barnsdall lies in the fact that the company ran a subsurface survey across this area a few months ago and on the outcome located No. 1 Mott. The Mohawk Petroleum Co. is rotating in a green sandy shale in No. 1 Clendennen slightly below 5,500 feet and the company expects to pick up the top of the pay in the very near future. No. 2 Hood is producing approximately 400 bbls. of clean 25.1 gravity oil per day on a compressor from 5,672 feet. The Mohawk has erected a rig for No. 3 Hood and is expected to move in rotary drilling equipment in the near future. The Plymouth Oil Co. has erected a new rig for a test to be drilled on the Bloemer property in Section 29-30-29 and drilling operations are expected to get under way in the immediate future. A short distance away, E. L. Labadie has material on ground for a rig to be erected on the Cavanaugh property preparatory to the initiation of drilling operations in the near future. Shell Oil Co. is rigging up No. 2 Porter Day for a conclusive pumping test, as this well, bottomed at 5,863 feet but plugged back to 5,838 feet, failed to result in a natural flow.

In the Union Avenue district of Kern County, located west of the Mountain View Field, the Alta Oil Corp. has picked up some favorable indications slightly above 4,400 feet and while the possibility of an early production test is problematical, the indications logged have tended to stimulate leasing operations in the immediate area. This wildcat is located west of a series of four dry holes drilled by the Pacific Eastern Oil Co., predecessor of the Western Gulf Oil Co. and affiliate of the Gulf Oil Corp. The Pacific Eastern found a little oil in one of its pioneer wells but was unable to develop commercial production and subsequently abandoned work and moved over into the Fruitvale Field with better success. East of the Gulf's pioneer work in the Union Avenue area, the Union Oil Co. has just passed the 5,000-foot level

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	Nov. 4		Oct. 28			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	.....	116,812
Fuel oil	200,481	28,640	194,616	27,802	2,488,151	.....
Diesel and gas oil	.....	.....	.....	.....	1,200,559	868,126
Gasoline	385,233	55,077	211,131	30,162	9,535,131	6,874,337
Kerosene	79,410	11,344	79,865	11,409	826,259	177,062
Foreign exports—						
Crude oil	.....	.....	165,027	23,575	6,222,650	7,123,867
Fuel oil	30,371	4,339	173,170	24,739	6,682,579	6,886,452
Diesel and gas oil	17,171	2,453	43,555	6,222	2,854,889	2,177,845
Gasoline	179,606	25,658	.....	.....	4,849,426	6,886,909
Kerosene	78,422	11,203	39,402	5,629	1,699,808	2,542,310
Naphtha distillates	.....	.....	.....	.....	.....	120,075
Coastwise domestic—						
Crude oil	.....	.....	64,310	9,187	5,891,821	12,308,300
Fuel oil	267,919	38,274	137,381	19,626	8,861,540	10,156,799
Diesel and gas oil	8,547	1,221	23,086	3,298	930,262	1,146,099
Gasoline	264,975	37,854	207,948	29,707	10,818,696	12,870,603
Kerosene	3,517	502	.....	.....	162,180	142,730
Naphtha distillates	.....	.....	.....	.....	27,651	.....

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	91,800	13,114	603,697	650,980
Gasoline	.....	.....	.....	.....	804,548	911,808
Kerosene	.....	.....	.....	.....	482,430	152,611
Lubricants	.....	.....	.....	.....	33,934	31,804
Foreign exports—						
Crude oil	.....	.....	76,600	10,943	1,618,886	889,922
Fuel oil	101,383	14,483	26,180	3,740	1,745,802	904,079
Diesel and gas oil	.....	.....	.....	.....	907,646	608,007
Gasoline	72,800	10,400	.....	.....	3,455,587	3,442,999
Kerosene	.....	.....	.....	.....	841,225	955,627
Lubricants	4,404	629	.....	.....	107,127	30,094
Coastwise domestic—						
Fuel oil	236,135	33,734	.....	.....	3,194,202	2,555,780
Diesel and gas oil	.....	.....	.....	.....	189,323	330,118
Gasoline	100,212	14,316	140,438	20,063	3,569,077	3,185,899
Kerosene	.....	.....	2,981	426	98,185	110,039
Lubricants	.....	.....	.....	.....	3,751	.....

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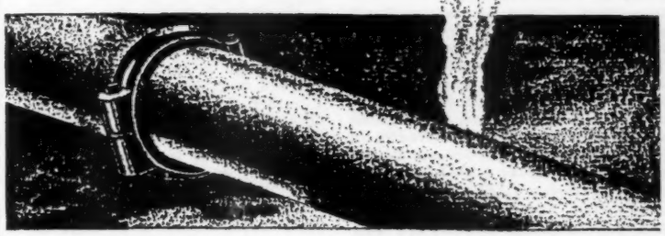

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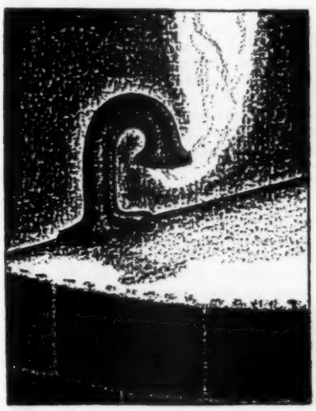

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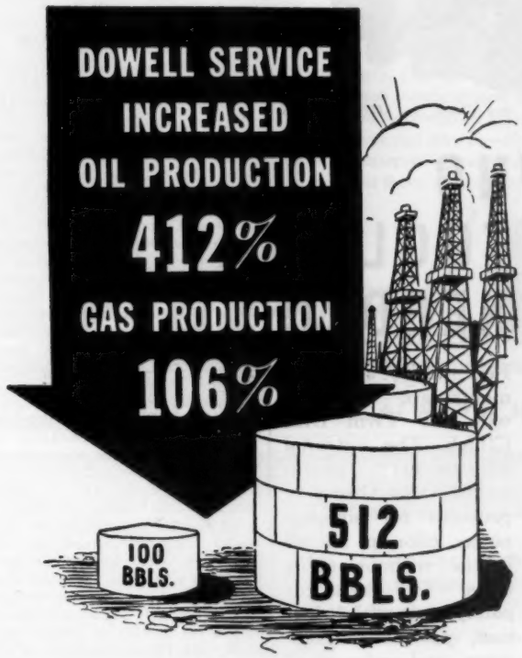

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in No. 1 K. C. L., a wildcat in Section 15-30-28, and while no showings of importance have been logged up to the present time, this test still has possibilities. As a matter of fact, the present productive formation in the Mountain View Field of Kern County is topped at 5,800 feet, although the lower portion of the Kern River series is logged somewhat above this point.

Lost Hills-Belridge

The Associated is still drilling in No. 1 Williamson, a deep test which the company is drilling in the Lost Hills Field of Kern County in conjunction with several other operators, and while minor showings have been logged from time to time, the well has not yet encountered a sufficient thickness of oil sand to justify the expectation of resulting in substantial production. The Associated has conducted several preliminary production tests during the work on No. 1 Williamson but so far has failed to find commercial production. In the South Belridge Field of Kern County the General Petroleum has not yet drilled entirely through the brown shale in No. 1 Berry, although the formation during the past 300 feet is not as compact as heretofore and appears to contain a larger quantity of sand and shells. No. 1 Berry has penetrated the greatest thickness of brown shale encountered in the state, and may still have a substantial thickness ahead. The Belridge Oil Co. is reaming No. 48-27 in the North Belridge Field of Kern County preparatory to landing casing a little off bottom at 5,482 feet. This new well, located in Section 27-27-20, is scheduled for completion in the Temblor, although the hole will be finished with pipe sufficiently large to permit a resumption of drilling at a later date when Eocene exploitation gets under way.

Ohio Oil Co. is making good footage in No. 1 K. C. L., a wildcat which the company is drilling along the eastern rim of the Buena Vista Lake in Kern County, but it will probably be another several weeks before the bit is deep enough to pick up anything of importance. The Comanche Oil Co. is making preparations to start drilling operations on its wildcat in the Comanche Point district of Kern County and will probably begin making hole some time within the next few days. This wildcat has been standing rigged up since the first of the current month and operators interested in the potentialities of the southern end of the San Joaquin Valley will be happy to see drilling operations actually get under way. Badger Oil Co. is also expected to resume drilling operations in the near future as this company's wildcat in the Wheeler Ridge-Tejon district cannot be considered a conclusive test at 4,430 feet by any stretch of the imagination.

Mount Poso

The Mount Poso Field of Kern County has taken a new lease on life and we may consequently anticipate the continuance of a limited amount of development work during the next several weeks. The General Petroleum, which recently completed No. 47 Heisen doing 325 bbls. per day from 1,975 feet, has just concluded drilling operations on No. 37 Heisen at the same depth and is making preparations for an immediate production test. In the meantime the company is rigging up rotary drilling equipment in No. 46 Heisen, scheduled to get under way in the near future. Bern Oil Co. is also rigging up rotary equipment and the company should consequently begin making hole in No. 3 Poso Creek in the very near future. West Front Petroleum Co. is expected to spud in No. 3 Grimes in Section 32 within the next 48 hours and the outcome of work on this well will be watched with interest. The Texas Co. picked up the top of the pay in No. 4 Glide, which has been redrilled and deepened from the first to the second Glide zone, and an early production test is anticipated. The Petroleum Development Corp. has spudded in No. 3 Vedder, a new well in Section 8-27-28, and the bit has already passed the 1,200-foot level.

Hugh B. Evans has successfully completed his No. 15 in the Midway-Sunset Field of Kern County and this new well, located in Section 35-32-23, is good for 140 bbls. of 16.3 gravity oil per day from 1,750 feet. The Honolulu Consolidated is expected to complete No. 23 in the Midway-Sunset some time during the next few weeks, as the bit in this hole is within a few hundred feet of completion. Considerable reconditioning work is scheduled to get under way in San Joaquin Valley fields within the next 90 days as a result of the increased allotment assigned to Coalinga, Midway-Sunset and other northern fields. The Shell started remedial work in the Coalinga Field several months ago and within the past three or four months has been gradually opening up production. The Shell suspended all production activities in the Coalinga Field three or four years ago but returned to the Valley early this year as a survey indicated that pipe in some of the wells had become seriously corroded during the period of suspension. Field reports indicate that these wells upon being returned to production showed a production higher than the current output at the time of suspension resulting from equalization of reservoir pressure.

Ventura Avenue

Although the General Petroleum's No. 15-A Barnard has proved somewhat of a disappointment due to its inability to result in commercial production in the deep 57 zone in the Ventura Avenue Field, the Shell Oil Co. has decided to drill a deep test and has accordingly spudded in No. 35 Gosnell. Associated has completed two wells in the deep 57 zone and both of them showed substantial production. General Petroleum has been unable to exclude water in No. 15-A Barnard, however, and has accordingly been obliged to plug back the hole by stages from 9,000 feet. Due to the extreme depth of the 57 zone in the Ventura Avenue Field, operators have been somewhat reluctant to exploit this horizon under present conditions. This is particularly true in view of the relatively low price for crude oil and the inability of operators to produce up to the maximum.

Honolulu Consolidated may possibly finish No. 6 on tideland permit No. 90 in the Vaqueros zone at Elwood instead of carrying this project on down into the underlying Sespe, as it appears to be showing up exceptionally well. The company has just run in and landed a string of 10¾-inch casing, which is amply large to permit a resumption of drilling if the company wishes to go ahead. Signal Oil & Gas Co., which encountered mechanical trouble a few weeks ago in its No. 2 on tideland permit No. 98, is sidetracking the fish in the bottom of the hole at 5,016 feet. This project has taken on a rather dubious outlook due to the failure of the well to pick up the productive Sespe. No. 8 Doty of the Barnsdall and Rio Grande is expected to pick up the top of the pay in the very near future. Three new wells are scheduled for completion in the Santa Barbara Mesa Field within the next 15 days as the entire trio has picked up the oil sand. These wells, Daniel Fisher's No. 1 Strahley at 2,042 feet, Fred Garliepp's No. 1 at 2,027 feet and Mann & Cates' No. 2 Knott at 2,075 feet, should result in normal production upon completion, although the latter project, No. 2 Knott, is being

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status:
Palm Ridge Oil Co., No. 1 Palms, Los Angeles Co.	2- 2-15	7,150	suspended
Clayton, G. L., No. 1 Clearwater, Los Angeles Co.	31- 3-12	rig	rigging up
Pacific Gulf, No. 1 Athens, Los Angeles Co.	19- 3-13	6,034	suspended
Pacific Dev. Co., No. 1 Wilmington, Los Angeles Co. ...	16- 3-13	901	suspended
Sunrise Pet. Co., No. 1 Dominguez, Los Angeles Co. ...	3- 4-13	5,250	suspended
Kelly & Son, No. 1 Torrance, Los Angeles Co.	7- 4-13	921	cemented
Nudson, T. T., No. 1 Inglewood, Los Angeles Co.	17- 2-14	rig	rigging up
Oakes & Mead, No. 1 Lynchwood, Los Angeles Co.	31- 2-12	4,940	suspended
Celito Oil Co., No. 1 Monterey Park, Los Angeles Co...	25- 1-12	5,319	plug 5,306
Community Oil Co., No. 1 Montebello, Los Angeles Co...	34- 1-11	5,281	suspended
Universal Consd., No. 2 Montebello, Los Angeles Co. ...	5- 2-11	3,270	sd. sh. drilling
Universal Consd., No. 3 Montebello, Los Angeles Co. ...	5- 2-11	3,164	sd. sh. drilling
Midfield Oil Co., No. 1 Whittier, Los Angeles Co.	19- 2-11	rig	rigging up
Signal Pet., No. 1 Puente, Los Angeles Co.	14- 2-10	4,905	testing
Recovery Oil Co., No. 1 Sunset Beach, Los Angeles Co..	16- 5-11	3,400	suspended
Willetta Pet., No. 1 Saugus, Los Angeles Co.	35- 5-16	2,074	bailing
Alpha Oil Co., No. 1 Calabasas, Los Angeles Co.	22- 1-18	1,317	suspended
Marble, Willard, No. 1 Van Nuys, Los Angeles Co. ...	6- 2-16	2,760	suspended
Plymouth Oil Co., No. 1 West Coyote, Los Angeles Co.	24- 3-11	5,507	cemented
Black Eagle Oil Co., No. 1 Huntington, Orange Co.	tideland	1,570	suspended
Nuoil Co., No. 1 Newport, Orange Co.	29- 6-10	5,090	cemented
Mineral Exploration, No. 1 Capistrano, Orange Co.	8- 8- 7	4,302	suspended
Saddleback Oil Co., No. 1 El Tora, Orange Co.	3- 6- 7	80	suspended
Tehama Pet., No. 1 Santa Ana Canyon, Orange Co.	33- 3- 8	....	grade
Placentia Dev. Co., No. 1 Placentia, Orange Co.	31- 3- 9	2,200	sd. sh. drilling
Rubens, Sy., No. 1 Atwood, Orange Co.	19- 3- 9	2,202	sd. sh. drilling
Bartholomae Oil Co., No. 1 Coyote, Orange Co.	22- 3-10	602	cemented
Spindle Top Oil Co., No. 1 Salton Sea, Riverside Co...	25- 7-10	3,590	suspended
Great American Pet., No. 1 Chino, San Bernardino Co..	18- 2- 8	2,445	suspended
Great American Pet., No. 2 Chino, San Bernardino Co..	18- 2- 8	1,854	hd. sd. drilling
McCarthy, C. F., No. 1 Chino, San Bernardino Co.	14- 3- 6	893	suspended

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temporarily delayed with mechanical trouble. The Lincoln Drilling Co. is drilling in the Sespe just below the 2,700-foot level in No. 3 Williams, a deep test under way in the Summerland district of Santa Barbara County, but the log is devoid of any favorable notations since the well drilled out of the upper zone. Julian Dietzen is rigging up rotary equipment for a new well to be drilled on the Williams property in Section 16-4-26, just north of the Lincoln Drilling Co.'s deep test, and work is expected to get under way within the next few days. Monterey Exploration Co. has abandoned No. 1 Hollister, a wildcat in the Point Conception district of Santa Barbara County, but has started preparations to drill a second test on the same lease. Continental Oil Co. has killed No. 2 Grubb in the San Miguelito Field in order to reperforate the casing in an effort to stimulate production. No. 2-A Hobson of the Chanslor-Canfield Midway Oil Co., which technically was the first well to be finished in the San Miguelito Field, died during the early part of the current week and the company has started reconditioning work.

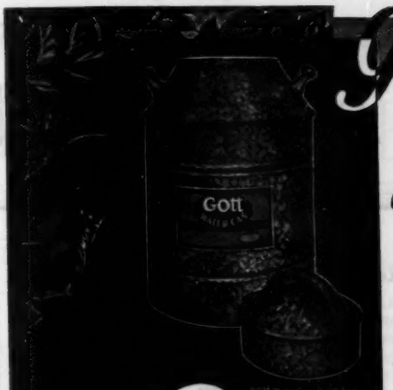
Dominguez

Shell Oil Co. is expected to complete No. 48 Reyes in the Dominguez Field of Los Angeles Basin some time during the next fortnight and the Union Oil Co. is likewise expected to finish Nos. 32 and 33 on the Callender property and No. 24 Hellman during the same period. Republic Petroleum has suspended work on No. 2 Childs in this field and is rigging up rotary equipment on No. 5 Childs preparatory to an early spud. Plymouth Oil Co. got a wet job on No. 1 McNally, an outpost in the West Coyote Field in Los Angeles Basin, and the 9⅝-inch water string has accordingly been recemented at 5,237 feet. The Standard has four wells under way in this field at present, one of which, No. 114 Murphy Coyote, should be tanking oil in the near future. In the Montebello Field, the Universal Consolidated has resumed drilling operations in No. 1 Alvitre and No. 1 Repetto, following the landing and cementing of 13⅜-inch casing. Both of these wells are scheduled to be carried down to the deep Cruz zone, discovered by the Universal Consolidated several weeks ago.

Drilling operations in the Richfield district of Los Angeles Basin have shown a substantial decline during the past several weeks and the failure of the Breen zone to show substantial production should prove a deterrent to future development. Despite the failure of the Breen zone to come up to expectations, Messrs. Webb, Bush and Newell have started rig construction for a new well to be drilled approximately 1,750 feet north and a little west of Jefferson and Morse Streets. In the Santa Fe Springs Field, the Shell Oil Co. is swabbing and bailing No. 28 Slusher following conclusion of drilling operations at 4,541 feet but the well has not yet shown production. Union Oil Co. is expected to complete No. 16 Farwell, another new well in the Santa Fe Springs Field in the near future, as this project is scheduled for completion in the Meyer zone. T. T. Nudson is rigging up rotary drilling equipment in No. 1 Sentous, a new well to be drilled in the Inglewood Field of Los Angeles Basin, and the well is expected to be spudded in some time within the next 10 days. Nudson's projected deep test is fairly well located with respect to structure, although of course it is located just outside the present limits of production. Deep drilling may change the outlook, however, particularly if the lower zones are larger in areal extent than the upper horizons.

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status:
Monterey Expl., No. 1 Point Concepcion, Santa Barbara..	33- 5-33	3,653	abandoned
Monterey Expl., No. 2 Point Concepcion, Santa Barbara..	33- 5-33	....	material
Lincoln Drlg. Co., No. 3 Summerland, Santa Barbara Co.	21- 4-26	2,700	gr. sd. drilling
Meganos Oil Co., No. 1 Purisima, Santa Barbara Co. ...	28- 8-34	3,000	suspended
Barnsdall-Rio Grande, No. 8 Doty Elwood, Santa Barbara	15- 4-29	4,170	sd. sh. drilling
Signal O. & G. Co., No. 2 Elwood, Santa Barbara Co. ..	tideland	5,016	sidetracking
Cuyama Oil Co., No. 1 Cuyama, Santa Barbara Co.	12-10-27	3,950	suspended
Indian Pet., No. 1 Shude, Ventura Co.	tideland	3,825	sd. sh. drilling
Woodrow Pet., No. 1 Rincon, Ventura Co.	4- 3-24	7,620	br. sh. drilling
Richfield Oil Co., No. 3 Rincon, Ventura Co.	17- 3-24	2,580	cleaning out
Hancock Oil Co., No. 1 Fillmore, Ventura Co.	13- 4-19	2,900	sd. sh. drilling
Oil Ridge Oil Co., No. 1 Fillmore, Ventura Co.	1- 4-19	rig	rigged up
Driggs Pet., No. 1 South Mountain, Ventura Co.	17- 3-20	2,310	rd. sh. drilling
Kneiper & Atha, No. 1 Bardsdale, Ventura Co.	7- 3-19	1,360	gr. sh. drilling
Williamson & Donaher, No. 1 Simi, Ventura Co.	36- 3-18	790	recemented
Dabney, H. R., No. 1 Simi, Ventura Co.	22- 2-18	1,091	bl. sh. drilling
C. C. M. O., No. 3-A San Miguelito, Ventura Co.	23- 3-24	4,166	suspended
Midlands Pet., No. 1 Ojai, Ventura Co.	9- 3-23	7,830	suspended
Wilshire Oil Co., No. 1 Sulphur Mountain, Ventura Co.	20- 4-21	2,198	suspended
Kirk, W. A., No. 1 Sulphur Mountain, Ventura Co.	21- 4-21	1,100	br. sh. drilling
Mosher, J. W., No. 1 Santa Paula, Ventura Co.	22- 4-21	1,672	br. sh. drilling
Las Posas Pet., No. 1 Las Posas, Ventura Co.	22- 3-20	5,000	suspended
International Oil Developers, No. 1 Conejo, Ventura Co.	33- 2-20	2,910	hd. sd. drilling
Hub Pet., No. 1 Gould Hills, Kern Co.	22-29-21	6,840	suspended
Casa Mira Oil Co., No. 1 Belridge, Kern Co.	29-28-20	4,982	suspended
General Pet., No. 1 Belridge, Kern Co.	30-28-21	9,601	sd. sh. drilling
Cumberland Oil Co., No. 2 Devils Den, Kern Co.	17-26-18	3,270	suspended
Lincoln Pet., No. 1 Devils Den, Kern Co.	10-25-18	2,172	suspended
Hanna, Tom, No. 1 Devils Den, Kern Co.	25-25-18	3,516	suspended
Pyramid Hills Oil Co., No. 1 Devils Den, Kern Co.	24-25-18	4,140	suspended
Fowler, P., No. 1 Blackwell Corner, Kern Co.	15-26-19	3,170	suspended
Associated, No. 1 Lost Hills, Kern Co.	2-26-20	6,300	gr. sd. drilling
Howells Bros., No. 1 Round Mountain, Kern Co.	32-28-29	1,381	br. sh. drilling
Keno Pet. Co., No. 1 Lerdo, Kern Co.	14-29-27	4,531	suspended
Carribou Record, No. 1 Kern Front, Kern Co.	11-28-27	rig	rigged up
Ohio Oil Co., No. 1 Buena Vista Lake, Kern Co.	31-31-26	2,850	sd. sh. drilling
Caravel Pet. Co., No. 1 Edison, Kern Co.	19-30-30	1,801	suspended
Union Oil Co., No. 1 Union Avenue, Kern Co.	15-30-28	5,000	sd. sh. drilling
Alta Oil Co., No. 1 Union Avenue, Kern Co.	6-30-28	4,400	sd. sh. drilling
Shell Oil Co., No. 1 Mountain View, Kern Co.	29-30-29	5,910	suspended
Shell Oil Co., No. 2 Mountain View, Kern Co.	29-30-29	5,863	rig to pump
Hogan Pet. Co., No. 2 Mountain View, Kern Co.	29-30-29	6,104	cemented
Hogan Pet. Co., No. 3 Mountain View, Kern Co.	29-30-29	mtl.	building rig
Bankline Oil Co., No. 1 Mountain View, Kern Co.	4-31-29	5,946	sidetrack liner
Barnsdall Oil Co., No. 1 Mountain View, Kern Co. ...	31-30-29	6,444	suspended
Labadie, E. L., No. 1 Mountain View, Kern Co.	29-30-29	....	material
Long Beach Pet., No. 1 Mountain View, Kern Co.	29-30-29	5,906	sidetrack D/P
Mohawk Pet., No. 2 Mountain View, Kern Co.	30-30-29	5,473	sd. sh. drilling
Mohawk Pet., No. 4 Mountain View, Kern Co.	30-30-29	mtl.	building rig
Comanche Oil Co., No. 1 Comanche, Kern Co.	15-32-29	rig	rigged up
Badger Oil Co., No. 1 Wheeler Ridge, Kern Co.	31-11-19	4,483	suspended
Gatton & Luethe, No. 1 Madera, Madera Co.	32-10-17	3,020	suspended
Russ Oil Synd., No. 1 Kingsburg, Fresno Co.	20-12-11	3,900	water tester
Bergman, Harry, No. 1 Kingsburg, Fresno Co.	12-12-11	4,279	fish D/P
Graham & Loftus, No. 1 Raisin City, Fresno Co.	20-15-18	5,906	suspended
Emerich Oil Co., No. 1 Mendota, Fresno Co.	35-13-13	3,820	suspended
Western Gulf, No. 1 S. P., Fresno Co.	3-17-15	6,500	sd. sh. drilling
Roscoe, D. L., well No. 1, Fresno Co.	36-16-14	rig	suspended
Hogan Pet. Co., No. 1 Joaquin Ridge, Fresno Co.	28-20-16	6,605	suspended
Superior Oil Co., No. 1 Jacalitos, Fresno Co.	6-22-16	6,407	hd. sh. drilling
Kent & McDonald, No. 1 Carrizo Plains, San Luis Obispo	3-32-22	3,830	suspended
Guess, E. B., No. 1 Corcoran, Kings Co.	7-21-21	6,197	suspended
Brown, A. M., well No. 2, Kings Co.	10-23-19	1,205	suspended
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17	6,873	suspended
Dudley Dome Oil Co., well No. 2, Kings Co.	9-23-20	370	cemented
Magee & Stone, No. 2 Alpaugh, Kings Co.	33-21-22	3,149	suspended
Willet Oil Co., No. 1 Cholame, Monterey Co.	10-25-15	mtl.	building rig
Na-Pa Oil Co., No. 1 Griffith, Napa Co.	7- 8- 3	3,750	suspended
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	5- 2-10	4,760	hd. sh. drilling
Pacific Northern Oil Co., No. 1 Guinda, Yolo Co.	23-12- 3	5,320	cemented
Buttes Oilfields Co., No. 1 Marysville, Sutter Co.	35-16- 1	2,731	gas—shut in
Buttes Oilfields Co., No. 2 Marysville, Sutter Co.	35-16- 1	4,136	sd. sh. drilling
Tehama Pet. Co., well No. 1, Glenn Co.	4-22- 5	4,696	redrilling



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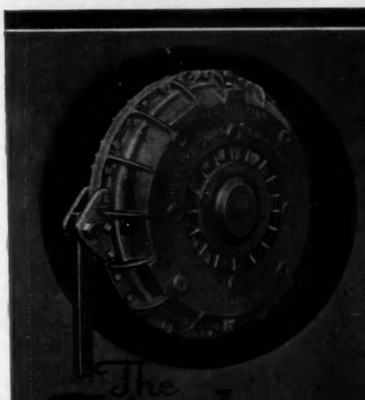

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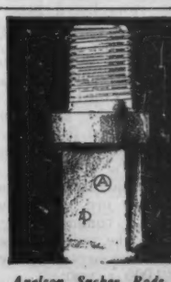

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NATURAL GAS DEVELOPMENTS

Texas Commission Order on the United Gas Rates

AUSTIN, Tex., Nov. 20.—The Texas Railroad Commission has issued an order fixing, temporarily, rates for domestic gas delivered at city gates on the system of the United Gas Public Service Co. The overall rate was fixed at 32 cents per 1,000 feet, the same as fixed for gas furnished by the Lone Star Gas Co.

The commission's opinion explained that, while the rate for domestic gas is 34 cents, "when figured over all, taking into account all unaccounted for gas, the rate is really 32 cents."

The commission announced the proposal after a hearing, called for the purpose of determining a fair and reasonable rate, based on valuation of the concern's properties. The order will become effective December 1. Users of gas in several hundred towns will be affected.

The commission explained that in the Lone Star case a flat rate was fixed at 32 cents per 1,000 feet for domestic gas and for all lost and unaccounted for gas.

"In the instant case, the lost or unaccounted gas is allocated to domestic gas and to industrial gas on the basis that the volume of the industrial or domestic gas bears to the total volume of gas sold," the commission stated, "the unaccounted for gas allocable to domestic gas takes the domestic rate and the amount allocable to the industrial gas takes the weighted industrial rate."

The commission pointed out that "the case has been left open, and if, upon a further investigation, the commission feels that a lower rate could be fixed, the case will be reopened, additional evidence taken and the rates lowered."

It was pointed out that the order applies to the main lines of the United Gas Public Service Co. in North, South, Southwest and East Texas and that the city gate rates on the line of the Northern Texas Utilities Co. serving that area from Wichita Falls to Wheeler County—is fixed at identically the same figures as was fixed in the case of the Lone Star Gas Co., that is, a flat rate of 32 cents per 1,000 feet for domestic and unaccounted for gas.

At the hearing the gas concern announced it was not prepared at that time to put on evidence. The commission then placed testimony of its engineers and accountants into the record and proposed the emergency order it has entered, pending a completion of the hearing.

St. Louis Rate Argued in Three-Judge Court

KANSAS CITY, Mo., Nov. 20.—A plea of the Laclede Gas Light Co. of St. Louis to be relieved of compliance with a gate rate reduction order issued by the Missouri Public Service Commission, through a Federal Court injunction, was heard here by a three-judge court composed of Judge Arba S. Van Valkenburgh, U. S. Circuit Court, retired, with Judge Albert L. Reeves and Judge Merrill E. Otis of the Federal District Court. At the conclusion of the hearing, the gas company's attorneys were allowed five days for filing a brief.

The hearing was on the St. Louis company's application for a temporary injunction to halt the public service commission's order reducing gas rates. Under the commission's order gas rates were to be reduced after November 1 so that consumers would enjoy a saving of $212,000 a year.

Company attorneys argued that the reduction would result in confiscation of the St. Louis company's property.

The commission's order was issued September 27. The company filed suit in the Federal Court October 11.

Seven Years Litigation Ends in Supreme Court

WASHINGTON, D. C., Nov. 20.—After litigation spreading over seven years, the Lexington, Ky., natural gas case involving about $1,000,000 in impounded money was argued in the Supreme Court.

Counsel for the Central Kentucky Natural Gas Co. contested a 45-cent rate fixed by the Kentucky Railroad Commission and urged the court to reverse the action of a three-judge Federal court which had found a 50-cent rate reasonable.

The lower court refused to set aside the 45-cent rate because the company declined to agree to certain conditions regarding the impounded fund. The company insisted that the three-judge court after finding a 45-cent rate confiscatory could not be sustained in refusing to set it aside.

The Railroad Commission and the city of Lexington, through Robert H. Winn, insisted the company had received fair treatment from the Railroad Commission under its franchise contract and took issue with counsel for the company who had insisted the three-judge court had refused to consider the additional cost of gas it was compelled to take from the Petroleum Exploration Co. from its gas field in Owsley County.

PONCA CITY RATES

An order permitting the Ponca City Gas Distributing Co., Ponca City, Okla., to continue for another year reduced gas rates in Ponca City, Newkirk and Kildare was issued by the Oklahoma Corporation Commission. A year ago the company cut rates for the first 100,000 feet from 47 cents to 45 cents per 1,000 feet.

The Kansas-Osage Gas Co., pipe line utility, was authorized to continue in effect for another year a 27-cent gate rate for the first step, at Fairfax, Burbank, Kaw City, Ponca City, Newkirk and Kildare. The gate rate was reduced from 30 cents to 27 cents a year ago.

CALIFORNIA EXTENSIONS

LOS ANGELES, Calif., Nov. 18.—The Southern California Gas Co. has laid two new auxiliary gas lines in the Kettleman North Dome Field. The first installation consisted of 4 miles of 16-inch pipe, connecting Standard Oil Co.'s natural gasoline plant in the Kettleman Middle Dome with Southern California Gas Co.'s 20-inch main trunk line running south from Kettleman station. The second line consisted of 2 miles of 16-inch pipe connecting Southern California Gas Co.'s field gathering system from the Standard's 3-P plant to the 33-J natural gasoline plant. This line will tend to make natural gas operations more flexible in the North Dome.

TO CONTROL RUMANIAN WELL

A. Tintareanu, director of mines, Rumania, writes with reference to the natural gas well at Medias that this well is owned by the "Societatea Nationala de Gaz Metan," and is located on the Copsa Mica gas dome, near Medias, Rumania, and not in Hungary. Necessary efforts are being made, at the present time, to stop the free flow of gas, which the Societatea Nationala de Gaz Metan hopes to be successful.

Kansas Gas Rate Case Before Supreme Court

WASHINGTON, D. C., Nov. 20.—The Kansas gas rate case was argued in the Supreme Court during the past week.

The case is an appeal by the Kansas Corporation Commission seeking to set aside an order of a three-judge district court order restraining the commission from requiring the Cities Service Gas Co. to reduce its charges for natural gas piped into Kansas from 40 cents to 30 cents per 1,000 feet at the city gate.

Early in the arguments the court raised the question of jurisdiction.

Counsel for the commission took a position agreeing with Chief Justice Hughes and Justices Stone and Roberts that the three-judge court should have dismissed the suit which 10 distributing companies brought against the commission. They concluded their arguments with the suggestion that the court reverse the action of the lower court and direct it to dismiss the cases.

Counsel for the distributing companies and for the Cities Service Gas Co. which furnished them natural gas they sold consumers opposed the suggestion that the lower court should be overruled. They insisted their rights would be materially affected if the commission's 30-cent order were permitted to stand.

James W. Finley, counsel for the pipe line company, said the proposed reduction of 10 cents in the price to be paid by distributing companies would result in an annual loss to his company of approximately $2,000,000. He also protested against heavy costs to which his company would be subjected should the controversy be reopened.

Robert D. Garver, for the distributing companies, stated the cost of proceedings up to the present time in fighting the order of the commission amounted to about $300,000.

Chief Justice Hughes, who had throughout the argument maintained the position the Federal District Court should have dismissed the suit, asked counsel for the commission whether he was correct in understanding that the position of the State was that reversal of the Federal District Court and an order requiring dismissal of the suits would still leave the whole question in the process of determination by the commission and that nothing final had been determined. To this question he received an affirmative reply.

Justice Stone pointed out there could not be confiscation of the gas company's property until after a complete rate order had been made, down to the consumer; that, if the court had no jurisdiction, the rate case in its present form could not be decided on its merits.

Supreme Court in Texas to Hear Appliance Case

AUSTIN, Tex., Nov. 20.—The Supreme Court has granted a writ of error in the case of State of Texas against the San Antonio Public Service Co. because of the importance of the question, and noted that the court would retain the case for consideration instead of sending it to the Commission of Appeals.

The State sued for penalties and an injunction to restrain the company from selling gas and electrical appliances and won a judgment in the trial court. The Austin Appellate Court reversed the case, but affirmed that part of the judgment restraining the company from doing an appliance business in Seguin. Reversal was ordered and the injunctions against the company purchasing and selling gas and electrical appliances to its customers in San Antonio was dissolved.

The court will hear arguments and decide the issues raised in the case, whether a public service concern supplying gas and electricity also can engage in the business of handling appliances.

Pacific Rate Reduced by California Commission

LOS ANGELES, Calif., Nov. 18.—The California Railroad Commission in an unanimous decision has cut the gas rate of the Pacific Gas & Electric Co. about $2,100,000 annually to develop a yield of about 6⅔ per cent on a new rate base of $105,000,000 for the gas division. Under stipulation the new rates are to be retroactive to July 16. In determining the new rates the commission abolished service charges and substituted therefor a minimum monthly charge. Artificial gas rates in certain portions of the company's territory were found fair and left unchanged.

In arriving at its new rate base of $105,000,000, approximately $13,500,000 below the company estimate, the commission eliminated $12,000,000 as going concern value.

"A dismal picture for the future was painted in the matter of new business and revenue," the decision said. "Company's expert called to testify regarding probabilities of the principal natural gas field supplying this territory (Kettleman) only would allow a life of 15 years, three years of which has already passed. It is difficult to imagine a purchaser putting up anything for going value under such prospects.

"However, the commission here will use more optimism than the company has shown and accredit this property with a reasonable recognition of going value through allowance as an operating expense of over $800,000 a year for development expense which is approximately 7 per cent on the company's claimed going value figure and by additional allowance of return over reasonable cost of money."

FAILURE IN TIOGA COUNTY

WELLSBORO, Pa., Nov. 18.—Drilling on Penn United Gas Co.'s No. 1 Locey, in Charleston Township, Tioga County, was stopped Wednesday afternoon with bit at 5,347 feet and entirely through the Oriskany sand. The well has been officially declared dry by officials of the company and the first test on the north flank of the Wellsboro, Pa., anticline has met with failure.

The George Stevens well, another Penn United activity is the only project now being worked in the county. Drillers passed the 300-foot mark this week.

AYLMER RATE HEARING

AYLMER, Ontario, Nov. 18.—A natural gas rate hearing opened here before G. F. Henderson, natural gas referee for Ontario. The town of Alymer is applying to the referee for reduction of the present rate of 90 cents net per 1,000 feet to 60 cents, while the Central Pipe Line Co. is making a counter application for an increased rate.

HOUSTON GAS RATES

HOUSTON, Tex., Nov. 20.—The city legal department has been instructed to go into contracts between pipe line and distributing gas companies in the city, as well as the city's contract for the purchase of gas, to see what can be done toward securing cheaper gas rates.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depth of sands, types of sands and operations on adjoining or nearby properties. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

Production Methods of Different Types Applied to Oil Sand

A problem in production is offered by two adjoining leases here. All the wells produce from the same sand, which is of very loose, porous character. The wells in one of the leases are tubed low, exposing most of the sand. Wells in the other leases are tubed high, with the result that the sand is kept flooded. Vacuum of about 22 points is applied to the wells in both of these leases. Which is likely to give the better ultimate recovery, the high tubing or the low tubing of the wells?—D. S. N.

If you have two wells or two groups of wells producing from the same formation part of them having fluid in the hole the sand and the others being kept pumped down so that the face of the sand is exposed you apparently are utilizing two forms of energy to get the oil into the well, namely, vacuum and water drive.

Those wells that have fluid in the hole above the top of the sand are sealed against a vacuum. If a vacuum is really effective it should be applied to a formation in such a manner as to cause air or gas to move through intake wells to the wells under vacuum. This causes atmospheric pressure to do part of the work of securing the oil. By creating pressures below atmosphere in one portion of the sand there is a tendency for air from the surface to rush into the adjacent wells and seek to equalize pressures. In fact it does this at all times and the term vacuum is hardly applicable to this condition. A partial vacuum will more properly describe this condition.

If part of the wells contain fluid that covers the producing sand those wells will be sealed against atmospheric pressure and air cannot enter from the surface and find its way into the formation. The pulling of a vacuum on the formation at other wells will tend to cause the oil and gas to move toward the low pressure points around the wells under vacuum. The effect of this vacuum will, under these conditions, be limited to the formation immediately around the wells and the fluid level in such wells can be kept low by pumping.

In this manner a fluid gradient or hydrostatic head will be created between wells containing fluid above the top of the formation and those with low fluid levels. The water and oil will tend to flow toward the point of low pressure but the rate of movement may be so slow that the pumps in the high fluid wells may remove water and oil at a rate that will create a flow to those wells independent of the vacuum in other parts of the sand.

To operate under highest efficiency low fluid levels should be maintained in all wells that are being produced under vacuum. In other words the upper portion of the formation should be dry and some wells on the lease may be opened to the air so that it can enter freely and find its way to the vacuum area, driving any gas or fluid in the sand ahead of it to those outlet wells.

Your question indicates two methods of production and which method will recover the most oil is very difficult to predict. Water flooding has been known to give good results in flushing a sand of its oil and in other fields the application of partial vacuum has also increased the amount of oil produced. But where these two methods are combined it is hard to anticipate or predict final results.

In fact it is a little difficult to picture a condition such as you describe as existing in a porous formation. If the conditions such as outlined do exist in any pool it would be our judgment that very different underground reservoir conditions exist in different parts of this field. Changes in porosity, permeability and saturation of the sand would permit of the wells acting as you describe. Also changes in stratigraphy within the producing formation may account for the difference in fluid levels in the different wells.

It has been found that generally speaking the area immediately surrounding the well is affected most by the application of vacuum. By increasing the number of wells under vacuum or suction the areas of influence are increased and it is assumed that they overlap and in this manner oil trapped between wells is affected.

The application of vacuum is intended to create differentials of pressure within the formation so that the oil will drain to the low pressure wells. Structural position of the wells will have to be considered in studying a field's production problems. If edge water is moving into the formation under some hydrostatic pressure this rate of movement may be increased if some of the wells are under partial vacuum.

Engineers consulted say it would be necessary to have much additional information to answer your question properly but it is hoped that the foregoing discussion will be of aid to you in studying your production problems.

Inquiry About Acid Treatment of Oil Wells Comes From Japan

I read in The Oil and Gas Journal of July 20 references to treating with acids: "No. 1 Talley three drums of acid" and "No. 1 A. C. D. Riddle six drums of acid" and in the issue of July 27, referring to the Crook County Field in Wyoming, "with acid treatment," etc. In my country we have no experience in using any kind of acid in oil well operations, so I am anxious to know how and why and what kinds of acids are to be used. Would you kindly tell me briefly the outline of acid treatment in oil well operations?—K. U., Byoritsu, Taiwan, Japan.

Briefly the acid treatment is a method of trying to increase oil production in fields producing from limestone formations by the introduction of hydrochloric acid into the bottom of the well.

As you probably know, hydrochloric acid will dissolve limestone rapidly. When the charge of acid is placed in the bottom of the well it enters such pore spaces as exist and dissolves part of the lime, thereby making the openings larger and permitting freer flow of the oil in the formation.

While this sounds simple it is much more involved than simply pouring hydrochloric acid into the bottom of the well. Hydrochloric acid will damage pipe, casing and other parts in the well. Acid may eat away the casing seat and cause trouble. In fact a number of things can happen. There have been several articles in The Oil and Gas Journal about acid treatment. It is suggested particularly that you read the one by S. W. Putnam, in the February 23, 1933, issue and the one in the October 12, 1933, issue by M. E. Chapman.

Why Was It Called That?

PENSION

Many a retired oil man lives in comfort by reason of the pension paid by his former employers. The word pension is derived from the Latin pensio, a payment, from pendere, to pay. The history of pensions contains instances in which this practice of granting emoluments for one reason or another has resulted in unforeseen embarrassments. For instance, after Cortez conquered Mexico about 400 years ago, the Spanish king, to salve his conscience, granted a perpetual pension to the descendants of Montezuma, the vanquished ruler. These pensions have been paid ever since to a constantly increasing number of the Aztec emperor's posterity. When Mexico gained its independence from Spain the Mexican government continued paying the pensions. Now Mexican treasury officials propose to quit playing Santa Claus.

Getting Employes Interested in Accident Prevention Work

I would be glad to obtain some suggestions concerning methods by which the interest of employes may be enlisted in safety and accident prevention work. Upon whom should responsibility for enforcement of safety rules rest, foremen, superintendents or the higher executives? —N. O. D.

Don L. Cross, of the Standard Accident Insurance Co., presented a paper before a meeting of natural gasoline manufacturers which contained the sort of information you seek. Mr. Cross said:

"Before the employes will accept and absorb constructive training, there must be some incentive, something must be done to create a desire on their part for this training. Splendid results have been obtained by conducting contests and giving recognition of some sort for those having the best accident and efficiency record. The rules and regulations governing the contests should embody as many of the company's operating rules and instructions as possible. The enthusiasm and interest created by the contest will insure enough study of the rules to provide a good general education. We must go still farther and carry our educational program to each individual employe. This can only be accomplished by making the educational program a part of the regular operating program.

"The management should promulgate rules, regulations and specific instructions which should be passed on down through the various superintendents, department heads and foremen, each in turn assuming responsibility for the execution and enforcement of the rules in his respective department. Following out this procedure the foreman is the man who has a real opportunity to accomplish constructive work, and if he is a real foreman he will not overlook this opportunity. Each individual is a problem in himself and requires personal training and supervision.

"A foreman's most important duty should be to study the job at hand and make sure that everything is in readiness and that every man in the gang is familiar with any and all hazards that they may encounter, and that they have the proper safe tools and equipment with which to do the job safely.

"A foreman should study his men and be familiar with their characteristics, their habits, their home life, etc. If an employe is having domestic troubles, sickness in his family, or financial worries, he should not be put at dangerous work where he may injure himself or a fellow workman. I have made a study of the accident records of a refinery employing about 1,100 men to determine whether or not the younger employes, that is young in the service of the company, had more accidents than the ones having more experience and the results were as follows: 47 per cent of the employes with over one year service had only 14 per cent of the accidents, and 53 per cent of the employes with less than one year service had 86 per cent of the accidents."

XUM

TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the questions is considered to be confidential.

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Dangerous Static Electricity Is Formed in Gasoline Tanks

What is the explanation for the formation of static electricity in gasoline tanks on trucks and tank cars? Does the use of drag chains on trucks, etc., give any protection against the formation of this kind of electricity?—G. T. D.

There is much difference of opinion as to the conditions that cause the formation of static electricity but it is generally agreed that friction is responsible for this trouble as it is met with in the petroleum industry. It appears that the charges of positive and negative electricity become separated and it is the rejoining of these with themselves or other opposite charges that is shown by the formation of a spark, which so frequently is followed by fire and explosion. The remedy is some form of grounding to permit easy passage of the charges.

This subject has been studied by the Safety Committee of the National Fire Protection Association, the following being extracts from their report. It was noted that there is a confusion in reference to static electricity and stray currents. Some fires which were first reported to have been caused by static electricity were afterwards found to have resulted from other causes. Stray currents flowing between electric car tracks parallel with side tracks and which were both crossed by electric interurban lines is one that has been noted in several reports. This hazard is entirely different from static. Insulating of side track and bonding of pipe lines to side track and all other equipment will usually remedy this condition.

The presence of static has been reported in many operations, such as loading and unloading of tanks at service stations, loading and unloading boats, tank steaming, sand blasting, spray painting and filling barrels. One example is the rolling of drums over wooden flooring to the filling lines developed enough static in the drum to cause a spark and ignite the gasoline when touched to the filling spout. A steel plate set under the drum at the filling position and grounded to the filling spout corrected this condition. Some of the most prevalent causes of the building up of static are nonmetallic filling equipment such as rubber hose, metal line hose not equipped with metallic terminal, and filling spouts insulated from pipe lines by poor connections. Rust and paint may be responsible for poor connections.

Tank trucks should be equipped with drag chains to act as bleeders to carry off any static that may have accumulated in the tank from causes such as the surge of the contents, the air friction of heavily travelled thoroughfares, and other causes. This recommendation is not in line with the findings of a committee in the East, who state that drag chains are dangerous and inefficient, but who agree that bonding to loading and unloading points is necessary. Now, if bonding is recommended, it is an admission that static exists in the tank truck, and if the bleeding-off can be accomplished by as simple a means as drag chains, this added precaution is well worth installing.

Tank steaming, it would seem from experiments made recently, can be a very dangerous operation if all lines are not connected and bonded to the tank, but if this bonding or grounding is intelligently done, no static can be built up and therefore there can be no danger.

Spray painting carries practically the same conditions, and the object being painted should be uninsulated and grounded to moist earth. It has been found that 10,000 volts will be quickly built up on insulated tanks being painted with a spray gun.

Many other operations are thought to be subject to static hazard and there is plenty of room for investigation in this field.

Reclaimed Oil From Crankcase Not Better Than New Oil

Wish you would note on the enclosed the statement is made that re-refined crankcase drainings make a better oil than new oil. Is this statement true?—R. E. F.

The oil drained from the crankcase of an automobile is very much inferior to the original fraction from the crude oil which was processed in the lubricating department of the refinery and finished into the several grades of commercial motor oils. Each refiner must adjust the details of the purification process to the character of the crude oil available, and these details are seldom the same in two refineries. The lubricating fraction from some petroleums cannot be finished as a marketable oil because of unsatisfactory composition, and in other cases the expense of refining the oil to a good grade of lubricating oil is too high to make the operation profitable. In other words, the motor oils are made in the refineries from selected stocks by methods that are under exact control.

The lubricating oil does not wear out in the automobile engine but the condition of a drained oil is much worse than the lubricating fraction from any crude oil, both as to physical condition and chemical composition. It has an objectionable odor and is diluted with light oils and cracked products, and contaminated with all sorts of things picked up from the roads, such as mineral dust, grease, soap, alkaline material, textile fibers, etc. There is also the problem introduced by the products of decomposition, derived from the materials entering the cylinders, the most serious being the metallic salts, acid and sulphur compounds, together with traces of metals; including iron, aluminum, copper and zinc. These facts suggest that any method that has for its object the re-refining of used oil must be even more complicated and the operations more thorough than originally applied by the refiner. The expense involved in reclaiming oil is too great to produce a product that will in all cases duplicate the original oil, and if the object is to make a lubricating oil that will be superior to the original, each step must be under scientific control. No arbitrary method can be suitable to bring odor, color, the common physical properties and chemical composition to the high degree of perfection required to make an oil that will be superior to a new oil such as is marketed by a reliable company.

In my opinion, the statement quoted is not correct.

Specification for Creosote Oil for Furnace Oil

I should like to obtain the detailed specifications covering creosote oil suitable for burning in furnaces, which I understand is being used in England.—N. S. A.

Much interest has been shown in Great Britain in the search for a liquid fuel to replace petroleum oils because of the high price of the latter due to the local tax of about a pound per ton (approximately 6 to 7 bbls). Some creosote oil is being used for motor fuel (see this page issue of May 25, 1933), and its use is being extended to furnace fuel. The British Standards Institution has prepared the specification No. 503 for creosote for fuel in furnaces.

The description of British standard creosote for use as fuel oil in furnaces is that it shall consist essentially of a distillate of coal tar and shall be free from admixture of petroleum oils, or undistilled crude tars. It shall be practically free from inorganic acids and shall be completely free from sediment and other impurities likely to choke the burners.

The specification gives full details of the manner of carrying out the tests for determining the properties of the oil. The specific gravity of the creosote at 38° C. (100° F.) shall not exceed 1.07 and its viscosity at the same temperature shall not exceed 100 seconds in the Redwood No. 1 instrument. The water content is not to exceed 1 per cent, and the matter insoluble in benzol is not to be above 0.5 per cent. The creosote shall become completely liquid on being slowly warmed to 38° C. with stirring, and on cooling it shall remain free from separated solids after standing for two hours at 32° C. (90° F.). Its flashpoint shall not be lower than 150° F. in the Pensky-Martens apparatus, and the ash remaining after complete ignition not above 0.05 per cent. The gross calorific value shall be at least 16,000 B.t.u. per pound.

Chlorine Supply For Treating by the Hypochlorite Process

In the September 14th issue you reply to D. L. W. on a question of control of hypochlorite treating and I take the liberty of giving you our method which you may desire to pass on to D. L. W.—D. D. S.

At the time Dunstan and Birch were publishing their interesting work we had a problem for a light oxidation of mineral oil and used hypochlorite instead of fuming sulphuric acid. The method was developed by Doctor Hirschkind, of the Western Electro Chemical Co., according to U. S. Patent 723,368, of Colin and Birch, which has expired.

The plant setup includes a caustic tank or kettle of approximately 1,000 gallons capacity, connected at the bottom through a T to a 1-inch cast iron pump and impeller, the discharge going to the top of the kettle. There are four lines—caustic, water, chlorine and circulating—entering at the top. The finished solution is pumped to an elevated supply tank.

A caustic solution of the required strength necessary to combine with 100 pounds of chlorine and leave the desired alkalinity, is prepared in the lower tank or kettle and circulated by means of the pump. This solution passes through the mixing T on top of the tank, where the chlorine is introduced. In this position, the mixing T or ejector, will clear the chlorine line at the end preventing any caustic solution from entering this line.

The chlorine cylinder is inverted and set on a scale at an angle of 60 degrees. The weight proves the quantity of chlorine added and also gives the operator a check on the rate at which the chlorine is being delivered. After the batch has been brought to the desired condition it is pumped to the supply tank for use. A water line is added in order to flush all lines with water to prevent undue corrosion. All valves are iron.

No tests are necessary during the chlorination because a definite quantity of caustic soda is diluted with a known volume of water, and 100 pounds of chlorine added. Any strength of caustic solution may be chlorinated, adding the chlorine at such a rate that the temperature does not exceed 100° F. We have found 15 to 30 minutes about the proper time. High test hypochlorite or other solid forms are convenient in isolated districts, but in plants where caustic solutions are available this method will be found economical and safe for making hypochlorite solutions.

Influence of Tetraethyl Lead on Performance of Fuel

Would different quantities of tetraethyl lead added to a certain known grade of gasoline change any of the qualities of the gasoline excepting the antidetonating qualities? That is, would it affect the starting qualities or mileage?—H. S.

There is no direct influence of tetraethyl on the performance qualities of a gasoline, other than the knocking tendency. All of the Ethyl gasolines are required to meet definite specifications covering volatility and general purity; it is such requirements that influence easy starting and superior motor operation. Of course, the reduced knocking obtained by the motor fuel of high octane rating, especially in a high compression ratio engine, means smooth running and in many instances, increased mileage is obtained.

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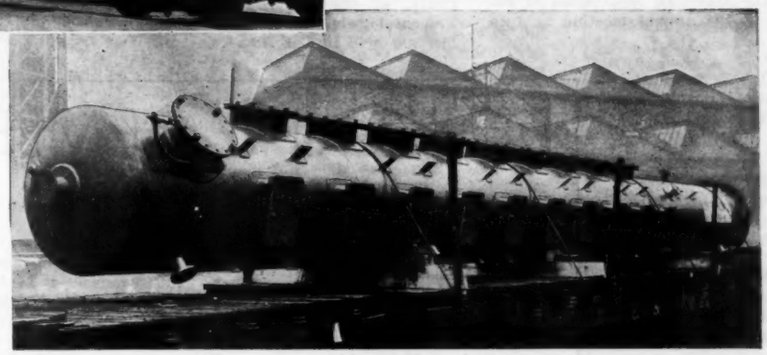

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PERSONAL PARAGRAPHS

T. C. SKEEN, with the Columbian Steel Tank Company, Kansas City, Mo., is reported as seriously ill with malaria in St. Lukes Hospital, St. Louis, Mo.

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WILLARD MILLER, chief geologist for Ramsey Petroleum Corporation, and his assistant, CLYDE WAGNER, have returned to Oklahoma City, Okla., from Greely, Colo.

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JAMES G. STANLEY, formerly with the Continental Oil Company's legal department, has joined the legal staff of the Planning and Co-ordination Committee under the oil code.

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A. A. CURTICE, a consulting geologist and associate of BOB MORAN, was elected president of the Pacific Section of the American Association of Petroleum Geologists at the annual meeting held in Los Angeles, Calif.

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DANIEL J. MORAN, president of the Continental Oil Company, spent several days last week at Ponca City, Okla.

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RALPH GEORGE, of the engineering division of the Columbian Steel Tank Company of Kansas City, Mo., was a recent visitor in New York City.

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C. B. KENNEDYE, of the Kennedye Well Engineering Company, Houston, Tex., spent the week at Gueydan, and other fields in the Louisiana, Gulf Coast district.

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MELBERT E. SCHWARZ, formerly with the Rio Bravo Oil Company, Houston, Tex., is now assistant professor of petroleum engineering at Texas A. and M. College, Lubbock, Tex., division.

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E. E. OVERTON, in charge of bulk sales for the Shell Eastern Petroleum Products, Inc., has returned to New York after an extended vacation trip to several points in the Middle West. He was accompanied by Mrs. Overton.

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DR. WALTER KAUENHOWEN, of Deutsche Vacuum del A. G., Hamburg, Germany, is spending a vacation and business trip in New York City and other points in the United States. He will return to Germany the latter part of the month.

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ROBERT (BOB) MAHONEY, brother of DAN L. MAHONEY, state zone agent in Texas for the Stanolind Crude Oil Purchasing Company, is visiting relatives and friends in Fort Worth, Tex., while a shattered bone in his right arm is healing.

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JOHN HARRIS, vice president of the Bartex Pipe Line Company, and R. H. LYNN, vice president of the Phillips Petroleum Company in charge of the land and geology departments, have been inspecting the company's properties in the Texas Panhandle.

• • •

ELTON RHINE, Empire Gas & Fuel Company, was elected president; DOUGLAS L. WILLIAMS, vice president, and GEORGE E. ROBINSON, secretary-treasurer, of the Gulf Coast Oil Scouts Association organized at a banquet held in Houston, Tex., November 17.

KARL HOENIG has joined the sales force of the Hughes Tool Company at Oklahoma City, Okla. Mr. Hoenig learned the oil business under his father, ARTHUR V. HOENIG, vice president of the Indian Territory Illuminating Oil Company.

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MR. and MRS. E. F. STEVENSON, Muskogee, Okla., announce the marriage of their daughter, MAXEY EUGENE to LESLIE JOHNSON, paleontologist, Sinclair Prairie Oil & Gas Company, Tulsa, on Saturday, November 11, at Muskogee. Mr. and Mrs. Johnson are at home to their friends at 1334 South College Avenue, Tulsa.

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A. R. MAY, resident geologist of the Shell Oil Company, at Bakersfield, Calif., and J. M. HAMILL, paleontologist of the Texas Company, in Los Angeles, were elected chairman and secretary, respectively, of the Pacific Section of the Economic Paleontologists and Mineralogists at the annual meeting held in Los Angeles, Calif.

B. H. STEPHENS, vice president of the Magnolia Petroleum Company, Dallas, Tex., has been named as technical adviser to the Petroleum Administrative Board.

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KARL HASSELMAN, consulting geologist and petroleum engineer, who has spent the past three years in Germany on research and consulting work, is now in Texas.

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FRANK R. CLARK, of Tulsa, president of the American Association of Petroleum Geologists, attended the tenth annual meeting of the Pacific Section of the association, held in Los Angeles, Calif.

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W. D. RANKIN, a consulting micropaleontologist, was re-elected secretary-treasurer of the Pacific Section of the American Association of Petroleum Geologists at the annual meeting held in Los Angeles, Calif.

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T. I. LARSON, Nesral Production Company, Houston, Tex., has been in Dallas, Tex., for the past several weeks.

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HARRY F. SPEARS, president of the Fleetwing Oil Corporation, has been elected a vice president of the Standard Oil Company of Ohio.

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M. O. McGEHEE, vice president of the Alamo Oil Company, Houston, Tex., has returned from an extended trip through the eastern states.

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W. E. VATER, general auditor of the Texas Gulf Production Company, and Alamo Oil Company, Houston, Tex., has returned to the home office after attending to business in Fort Worth and Dallas, Tex.

• • •

LUDWIG SCHMIDT, petroleum engineer of the Bartlesville, Okla., station of the Bureau of Mines, who was seriously injured in an automobile accident near Niles, Mich., in October, is slowly recovering at his home in Bartlesville.

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FREDERICK J. SINGLEY, of Baltimore, Md., president of the Houston Natural Gas Corporation, has been spending the past few weeks at the company's distribution headquarters, the Houston Natural Gas Company, in Houston, Tex.

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LaVERGNE F. GUINN was sworn in November 16 as a special assistant in the U. S. Attorney General's Department, at Dallas, Tex., to handle petroleum code violations. Mr. Guinn was formerly attorney for the Dallas Automotive Federation.

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MR. and MRS. ROY WALTERS and children of Ploesti, Rumania, have been visiting with DR. and MRS. W. H. AARON, of Pawhuska, Okla. Mr. Walters has been with the Rumanian subsidiary of the Standard Oil Company of New Jersey for nine years.

• • •

J. B. HOGE, of Nowata, Okla., a member of the firm of Hoge, McCann & Orner, drilling contractors, has been discharged from a hospital at Colorado Springs, Colo., where he has been for some time and is now at the home of his niece, MRS. GEORGE McCANN, at Kaw City, Okla.

DO YOU REMEMBER?

From The Oil and Gas Journal Files

25 Years Ago

November 22, 1908

The Cherokee shallow sand field, in Nowata and Rogers Counties, Oklahoma, is estimated to be producing at least 75,000 bbls. per day. The one pipe line, the Prairie Oil & Gas Co.'s line, can handle about half of it. One producing company, the Eastern Oil Co., is erecting ten 55,000-bbl. tanks in the field, and there is much congestion in the big Bartlesville sand area.

Frank Ufer, of the Kansas-Oklahoma Oil & Gas Co., has moved his headquarters from Independence to Tulsa. Harry Sinclair of Independence is a large stockholder in Mr. Ufer's company.

The Laurel Oil & Gas Co., of which H. E. Clark is the moving spirit, has taken five rooms in the Culberson Building in Tulsa and will establish general offices in that city.

20 Years Ago

November 27, 1913

The term Mid-Continent, heretofore restricted to Kansas and Oklahoma fields, for the first time is made to cover also the "Panhandle" Field of Texas, and the Caddo district in Louisiana. The term "Panhandle" refers to the Wichita Falls district, later known as the North Texas Field.

Oil has been found in several scattered tests in northern Oklahoma, below the Mississippi limestone, which explodes the old idea that it was useless to drill any deeper than the top of that formation. Many leases in the past have specified that the well be drilled to the Mississippi lime unless oil or gas in paying quantity be found above that formation.

E. C. Lufkin, vice president of the Texas Co., has been chosen to succeed J. S. Cullinan, as president. Mr. Cullinan resigned. Amos L. Beaty succeeds J. L. Autrey, as chief counsel, Mr. Autrey having resigned.

W. C. Fleisher, who made the Midway-Sunset Field famous by bringing in the Lake View gusher, leaves California for Venezuela, where he will be field superintendent for the Barber Asphalt Co.

The value of the crude petroleum produced in the United States in 1912 was $163,802,334 and of the natural gas $84,563,957.

10 Years Ago

November 22, 1923

Herbert L. Pratt, Jr., has gone to Mesopotamia where he will engage in the development of oil properties interrupted by the World War. Mr. Pratt is a son of the president of the Standard Oil Co. of New York.

William Groundwater has been appointed manager of transportation for the Union Oil Co. Mr. Groundwater will be at the head of a large pipe line system and a fleet of 22 tankers and oil barges with a carrying capacity of 1,000,000 bbls.

Twenty listed oil stocks at their recent lows were selling for $1,100,000,000 less than their highs for 1923.

A recent cut in Mid-Continent crude oil prices brings Kansas, Oklahoma, North Central and East Central Texas oil down to an average of 93 cents per barrel. In Oklahoma and Kansas oil below 33 gravity brings 75 cents; 33-33.9 gravity $1, and 40 degrees and over, $1.25.

Edward H. Jennings, one of the most widely known oil and gas operators in the Eastern and Mid-Continent fields, dies in Pittsburgh, Pa., age 71 years. He had been in the oil business 50 years.

FRED H. SPALDING has become Federal oil investigator for Nebraska with headquarters at Lincoln.

* * *

W. E. RAMSEY, Oklahoma City, Okla., oil producer, is recovering from an operation for the removal of his vermiform appendix.

* * *

ALDRICH BLAKE, of Oklahoma City, Okla., has moved to Houston, Tex., where he will have charge of work of the Flag Oil Company.

* * *

JOHN G. BARTRAM, of the geological department of the Stanolind Oil & Gas Company, at Casper, Wyo., was a Denver, Colo., visitor this week.

* * *

ARTHUR R. ADELBERG, manager of the petroleum industry division, the Duraloy Company, Pittsburgh, Pa., was a visitor in Tulsa and vicinity last week.

* * *

EDWARD ROBERTS, of the International Petroleum Company, Ltd., Lima, Peru, arrived in New York City last week on the Grace liner, Santa Clara.

* * *

E. C. KINCADE, vice president of the Gulf Pipe Line Company, Houston, Tex., has returned from an extended trip to Chicago, New York and other eastern points.

* * *

JOHN R. SUMAN, vice president and director of the Humble Oil & Refining Company, Houston, Tex., spent several days in Mason County, Texas, on a vacation hunting trip.

* * *

EARLE W. HODGES, director of public relations for Henry L. Doherty & Company, New York, is on tour of Cities Service properties. He visited Bartlesville, Okla., and Tulsa last week.

* * *

JOHN B. NICHLOS, oil and gas operator of Chickasha, Okla., was a visitor in Tulsa last week.

* * *

JACK MEEK, land man for the Stanolind Oil & Gas Company, has been transferred from Tyler to Fort Worth, Tex.

* * *

DREW CHRISTNER, division geologist for the Continental Oil Company, Fort Worth, Tex., has been deer hunting in the Davis Mountains.

* * *

N. P. ANTONIADES and E. J. MITROU, French representatives for the Warren Petroleum Company, are now visiting in the Mid-Continent Field and are temporarily located at Tulsa.

* * *

JOHN M. ALDEN, supervisor, U. S. Geological Survey, Tulsa, read a paper entitled, "Functions of the U. S. Geological Survey," before the November meeting of the A.I.M.E., Mid-Continent Section, on the evening of November 13.

* * *

M. E. GARRISON, gas engineer with the General Petroleum Corporation, delivered a paper on "Fundamentals of Absorption and Distillation," before the November meeting of the California Natural Gasoline Association at Los Angeles.

* * *

A. O. NELSON, East Texas representative for the Mission Manufacturing Company, was married to MISS LOWELL POPE on November 10 at Tyler, Tex. Miss Pope is secretary to the geological department of the Sinclair Prairie Oil Company in that city.

* * *

R. J. METCALF, geologist, Mid-Kansas Oil & Gas Company, Fort Worth, Tex., is in the hospital at Beaumont, Tex., with a broken leg resulting from an automobile accident that occurred near Jasper, Tex., last week. He is reported to be getting along all right and it is expected that he will be moved to his home in Fort Worth shortly. Mrs. Metcalf was with Mr. Metcalf at the time of the accident and sustained severe bruises but is getting along nicely at last report.

Rose Swiftly to Important Post

It required only 16 years for W. F. Kostelka to rise from a minor clerkship to the vice presidency of a major marketing concern. When he was 16, in 1917, Mr. Kostelka—his friends call him Bill—got a job with the Louisiana Oil Refining Corporation as a clerk in the traffic department. He was advanced from one job to another till on May 1, 1933, he left the Arkansas Natural Gas Corporation, parent organization of Louisiana Oil Refining, as manager of wholesale sales to become vice president in charge of sales of the Grogan Oil Company, which acquired the Rusk Refining Company plant in Overton, Tex.

W. F. KOSTELKA

To aptitude Mr. Kostelka added willingness to study and to tackle hard jobs, with the result that he had been in his minor position in the traffic department of the Louisiana Oil Refining a short time only when he was transferred to the sales department. Later he was put in the refining department and after familiarizing himself with that phase of the industry he was made a shipping clerk in the sales division. He was advanced rapidly to manager of wholesale sales and was one of the personnel of the Louisiana Oil Refining retained by Cities Service Company when Louisiana was acquired by it a few years ago.

Mr. Kostelka was born 32 years ago in Buckholtz, Tex., from where he migrated to Shreveport, La., with his family while still a youngster, and went through grammar and high school. In 1923 he married Miss Lillian Lutzenberg, of New Orleans, La., and they have two children.

S. D. (STEVE) DAY, representative for the Barrett Company, Houston, Tex., spent a few days in Fort Worth and Dallas, Tex., on business during the past week.

* * *

HERMAN W. PONTIUS, formerly investigator in East Texas for the Department of the Interior, is now in West Texas connected with the land and scouting department of the Mid-Kansas Oil & Gas Company.

* * *

STANLEY C. HEROLD, of Los Angeles, Calif., who recently returned from Russia, spoke informally on the petroleum industry of Russia at the November meeting of the Los Angeles Petroleum Accountants Society.

* * *

DR. F. W. SULLIVAN, chairman of the Petroleum Division of the American Chemical Society, has appointed H. T. BENNETT of the Mid-Continent Petroleum Corporation, and H. M. SMITH of the Bureau of Mines at Bartlesville, Okla., to cooperate in preparations for the twelfth midwest regional meeting of the society. DR. ROY CROSS is chairman of the Kansas City committee, and H. M. STEININGER is secretary.

* * *

WILLARD T. HANSEN has succeeded J. A. SHERIDAN, resigned, as assistant general manager of Barnsdall-O'Neill Oil Company, Milwaukee, Wis. Mr. Hansen, who has been associated for several years with Barnsdall-O'Neill and also with the former O'Neill Oil Company, is well known to the Wisconsin trade.

* * *

DR. GEORGE GRANGER BROWN, professor of chemical engineering, University of Michigan, will address the Chicago section of the American Chemical Society at the Midland Club, Chicago, at 6:15 p.m., November 24, on the subject of "Combustion of Gasoline in Automobiles." He is to discuss the combustion of hydrocarbons not only from the viewpoint of their use as fuel as a direct source of heat but also in internal combustion engines, including the subject of motor fuels generally.

GILLETTE HILL, independent oil operator, with headquarters in Houston, Tex., has returned from a hunting expedition in Southwest Texas.

* * *

R. A. CATTELL, petroleum engineer of the Bureau of Mines, has returned to Washington, D. C., from a trip through the California oil fields.

* * *

ARTHUR SEELIGSON, of Oklahoma City, Okla., with the Slick-Urschel interests, who recently underwent a surgical operation, is expected to soon return to his office.

* * *

A. F. BOUDREAU, sales manager of Danciger Refineries, Inc., has returned home from an extensive motor trip in the Kansas City, St. Louis, Chicago and Minneapolis territory.

* * *

R. C. BECKSTROM, consulting petroleum engineer, Tulsa, is now assisting with the work of the Civilian Conservation Corps., with the rank of captain and is stationed at Chandler, Okla.

* * *

J. R. (JACK) ANDERSON is now district representative in Shreveport, La., for Dow Chemical Company, following the removal to Tulsa of NORMAN A. BEST, division manager, Dow Chemical Company.

* * *

F. W. KIRK, general manager of the Houston Pipe Line Company, Houston, Tex., was re-elected president of the South Texas Chamber of Commerce at a meeting of the organization in San Antonio.

* * *

GEORGE C. BULLETTE, formerly of Tulsa but now of Wichita, Kans., suffered amputation of his left leg in St. Francis Hospital there, November 11. A badly infected knee made the operation necessary.

* * *

G. HARRY CLAY, of the Kansas City Testing Laboratory, was in Tulsa last week.

* * *

L. L. FOLEY, petroleum engineer, Mid-Kansas Oil & Gas Company, Tulsa, presented a paper on "Curves and Co-ordinates for Engineers" before the Mid-Continent Section of the A.I.M.E., November 13.

* * *

C. BASCOM SLEMP, formerly secretary to the late President Calvin Coolidge, was a visitor in Amarillo, Tex., conferring with WALTER D. CALDWELL, president of the Gibson Oil Corporation, in which he is interested.

* * *

GEN. JACOB F. WOLTERS, counsel for the Texas Company, was taken to St. Josephs Infirmary, Houston, Tex., with a broken shoulder following an automobile accident near Huntsville. The car in which the general was riding struck a hog and turned over three times. HINES BAKER and W. M. WHILDEN, attorneys, were in the car but were unhurt.

* * *

LEONARD BAHAN, Texas oil and gas man, is visiting his old home town, Bradford, Pa. A son of JOHN BAHAN, veteran pipe line man who supervised the construction of the Cumberland pipe line from the Kentucky fields eastward, Leonard Bahan attended school in Kentucky and then went to Notre Dame University where in 1918 and 1919 he captained the football team which contained such stars as GEORGE GIPP, immortal ROCKNE star who died in 1920; CHET WYNNE, now coach at Auburn; CLIPPER SMITH, head coach at Santa Clara College; "SLIP" MADIGAN, famed coach of St. Marys Gaels; "HUNK" ANDERSON, now coach of the luckless Notre Dame eleven of 1933; BACHMAN, Michigan State coach, and GLENN CARBERRY, former coach at St. Bonaventure and now line coach at Fordham. Leaving college he was for a time a college football coach and a professional football player and then he turned to the oil business in partnership with his brother-in-law, TOM O'BRIEN, formerly with the Texas Company.

XUM

MARKET RECORD OF OIL SECURITIES

Dividend declarations by companies in the Standard Oil group point to payments in the December quarter of approximately $42,000,000. In the fourth quarter of 1932 their dividend payments amounted to $44,112,501.

Payments in the third quarter were only slightly more than $19,546,576, those for the second quarter totaled $34,527,000, while first quarter payments amounted to $32,406,332. Aggregate cash dividends by the Standard Oil companies for the year, therefore, are likely to come to $128,513,000, the smallest amount disbursed to Standard Oil shareholders in more than a decade. Payments last year aggregated $181,050,895.

The increase in Standard Oil dividends this quarter over September is explained by two large payments not made last quarter. Socony-Vacuum Corp., which suspended dividends last spring and paid nothing in September, will pay 25 cents a share this quarter, the aggregate amount of its cash distribution being approximately $8,000,000. Standard Oil Co. of New Jersey will pay nearly $13,000,000 against nothing in September, because the common stock is now on a semiannual dividend basis and pays only in June and December.

The December dividends are augmented by the semiannual distribution of $1.25 a share on Standard Oil Export Corp. preferred stock due this quarter. In addition the National Transit Co., which also is on a semiannual basis, will pay 40 cents a share compared with 35 cents last June. Standard Oil Co. of Kansas resumed dividends this quarter at the rate of 50 cents a share after suspension since March, 1931.

Only two Standard Oil stocks have paid no dividends this year. Borne-Scrymser and Ohio Oil common. Standard of Ohio paid one dividend of 37½ cents a share on the common last January, after which payments were suspended.

Seven of the companies now are on a basis of $1 a year: Atlantic Refining, Indiana, Socony-Vacuum, New Jersey, California, Kentucky and Nebraska companies.

Sun Oil

Declaration of the extra dividend of 9 per cent in common stock on the common indicates a sharp increase in the earnings of Sun Oil Co. in the second half of the current year, says the Wall Street Journal, which says it is likely that net profit for the year will approximate $4 a share on the common which would compare with net of $4,198,046 in 1932, which was equivalent to $2.35 a share on the common after dividends on the 6 per cent preferred. The company reports earnings semiannually, and in the first six months of this year showed net profit of $1,138,982, or 53 cents a share on $1,591,110 shares of common after preferred dividends.

The policy in the past has been to declare extra stock dividends out of earnings in order to bring disbursements on the common stock somewhere near earnings. Cash dividend on the common is $1 annually. The stock dividend of 9 per cent will be taken on the books of the company at $4,877,926, or $3.07 a share on the 1,591,110 shares of common outstanding. Figured on the present market value of the stock, about $50 a share, the stock dividend is equal to roughly $4.50 a share.

Gulf Oil

The Union Trust Co. of Pittsburgh will receive tenders until noon November 25 for the sale to it of not exceeding $2,000,000 Gulf Oil Corp. 15-year 5 per cent debentures at not exceeding par and interest.

S. O of Kansas

C. B. Wrightsman, president of Standard Oil of Kansas, has announced that the directors have adopted a resolution placing the company on a dividend basis of 50 cents a quarter. The first payment will be made on January 31 to stockholders of record January 2.

Pan American

Pan American Petroleum & Transport Co. and subsidiaries report for the quarter ended September 30 consolidated net profit of $789,884, equivalent to 16 cents a share on the capital stock. No comparison with the same quarter last year is available.

British American Oil

British American Oil Co. of Toronto has declared the regular quarterly dividend of 20 cents for the final period of the year. The dividend will be payable in Canadian funds.

Chesebrough

Chesebrough Manufacturing Co. declared an extra dividend of $1 and the regular quarterly dividend of $1, both payable December 30 to stock of record December 8. A similar extra was declared a year ago while in the previous three quarters of 1933 50 cents extra was paid.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations, was as follows:

May 3	16.14	Aug. 9	22.29
May 10	17.22	Aug. 16	21.05
May 17	20.20	Aug. 23	23.40
May 24	18.00	Aug. 30	24.04
May 31	20.51	Sept. 6	24.68
June 7	21.53	Sept. 13	25.45
June 14	25.44	Sept. 20	25.28
June 21	23.09	Sept. 27	23.01
June 28	23.86	Oct. 4	23.29
July 5	25.20	Oct. 13	22.73
July 12	25.74	Oct. 21	20.53
July 19	24.89	Oct. 28	22.62
July 26	22.25	Nov. 4	22.81
Aug. 2	20.29	Nov. 11	23.76

Cosden Oil

The New York Curb Exchange has admitted to the list 23,523 shares of preferred stock of $100 par value and 400,367 shares of common stock, $1 par value, of the Cosden Oil Corp., a Maine corporation. Authority also was given to list 1,318 additional shares of preferred stock and 14,900 shares of common stock, upon official notice of issuance, in exchange for preferred and common stocks of the Cosden Oil Co. of Delaware, which may be deposited under the terms of the plan of reorganization of the Cosden Oil Co. of Delaware.

The Cosden Oil Corp. is the "read-

Independent Oils on New York Curb

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ended Nov. 11)

1933 High	1933 Low	Week ended Nov. 11 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Payable or last paid	1930 High	1930 Low	1931 High	1931 Low	1933 High	1933 Low
2⅜	⅛	2,500	1	⅞	1	American Maracaibo	(sh)	700,000	N.P.	....	.....	4½	½	1¾	¼	¾	¼
5½	1⅛	100	1⅝	1⅝	1⅝	Arkansas Natural Gas	(sh)	4,084,225	N.P.	....	.....	16¾	4⅝	6½	1⅞	3¾	¾
4	1	2,300	1⅜	1¼	1¼	Arkansas Natural Gas "A"	(sh)	3,522,521	N.P.	....	.....	16⅝	4⅝	6¾	1⅞	3⅜	½
4⅞	2	200	2¼	2¼	2¼	Arkansas Natural Gas pfd.	(sh)	2,193,000	$10	....	4- 1-32	8½	6¼	7	3⅞	5⅝	1½
14¾	6¼	600	14	13⅝	14	British American Oil Corp.	(sh)	2,622,642	N.P.	20cQ	3-14-33	23	13⅜	16⅞	6¼	9¾	6¾
7¾	¼	2,600	4¼	3⅝	4	Carib Syndicate	(sh)	579,000	25c	....	.....	2⅜	⅝	2⅜	¼	¾	¼
6¼	2	25,900	2¼	2	2⅛	Cities Service	(sh)	36,979,065	N.P.	....	6- 1-32	44¼	13	20¾	5	6⅞	1¼
30	10½	500	13⅜	12¾	12¾	Cities Service pfd.	(sh)	1,125,931	N.P.	....	6- 1-31	93⅞	78¼	84⅜	35⅜	53⅜	10
2½	⅝	2,000	1	1	1	Columbia Oil & Gasoline v.t.c.	(sh)	$2,000,000	$1	....	.....	¾	⅛	½	1/16	2⅛	½
4	¼	1,200	1⅝	1¼	1⅝	Colon Oil	(sh)	2,200,000	N.P.	....	.....	8¼	1⅛	3⅛	¼	1¼	¼
2⅞	1	100	1¾	1¾	1¾	Consolidated Royalty Oil Co.		$5,527,880	$10	5cQ	1-25-33	5⅞	2	2¾	1	2	1
3¼	2	1,500	3¼	2¾	3¼	Cosden Oil	(sh)	323,950	N.P.	....	.....	74⅜	1¼	3¾	⅜	2⅞	¼
8	2¼	300	6	6	6	Darby Petroleum	(sh)	609,696	N.P.	....	10-15-30	21¾	4¼	5	1¾	7⅛	1⅝
2¾	⅞	300	1¾	1½	1¾	Derby Oil & Refining	(sh)	500,000	N.P.	....	.....	11	2	6	1½	3	1
62	24	5,300	34½	48¼	54	Gulf Oil Corp.	(sh)	4,504,921	$25	....	10- 1-31	166⅞	58½	75½	25⅝	44¾	23
..	..	No sales	..	..	..	Indian Terr. Illum. Oil "B"	(sh)	7,090,037	N.P.	....	.....	53½	12⅝	16⅞	5	4½	1½
2	⅝	300	1	1	1	Kirby Petroleum	(sh)	750,000	N.P.	10c	4-15-33	3	⅞	1⅞	¼	1	⅝
1½	⅛	500	½	⅜	½	Leonard Oil & Development		$50,000,000	$25	....	.....	5	¾	2	½	¾	⅛
2¼	⅛	3,500	1¾	1¾	1¾	La. Land & Exp.	(sh)	3,000,000	N.P.	....	.....	4¾	½	1½	¼	2½	½
9½	1¼	200	6	6	6	Lion Oil & Refining	(sh)	250,000	N.P.	....	10-27-30	29	4⅞	6¾	1½	3½	⅞
12⅞	4¾	1,200	6⅝	6	6⅜	Lone Star Gas	(sh)	5,000,000	N.P.	16cQ‡	3-31-33	55⅞	19⅝	25	5½	11	3⅜
..	..	No sales	..	..	..	Margay Oil Corp.	(sh)	149,757	N.P.	25cQ	1-10-33	16	3	5	1⅞	8	3¾
6½	2⅛	500	4	3¾	3¾	Memphis Natural Gas	(sh)	920,000	N.P.	....	4-15-32	22¼	7½	12⅛	4½	5¼	1⅝
5	2	200	2¼	2¼	2¼	Mexico-Ohio Oil Co.		500,000	N.P.	....	.....	7½	1¾	4⅞	1½	3⅜	1½
1¼	¼	2,100	¾	½	¾	Mountain & Gulf		$4,000,000	$1	....	4-15-31	¾	⅝	½	⅛	⅜	⅛
6½	2½	100	4¾	4¾	4¾	Mountain Producers		$1,682,182	$10	20cQ	4- 1-33	12⅛	3¾	5⅞	2	4¾	2¼
20	10	300	13¾	13⅜	13⅜	National Fuel Gas	(sh)	3,810,183	N.P.	25cQ	1-16-33	41⅜	19⅜	26½	9¾	14⅝	8
2	½	1,500	1⅝	1⅝	1⅝	New Bradford Oil		$7,224,186	$5	....	4-15-31	3½	1⅛	1½	½	⅞	⅜
1⅞	½	100	1	1	1	New Mexico and Arizona		$1,000,000	$1	....	.....	7¼	1½	3	¾	1¼	⅜
5	½	100	2⅜	2⅜	2⅜	North Central Texas	(sh)	262,446	$5	....	9- 2-30	11¼	2½	3¼	⅝	1½	⅝
½	1/16	400	⅛	⅛	⅛	North European Oil	(sh)	1,372,391	N.P.	....	.....	6¼	⅝	2⅛	¼	⅜	1/16
..	..	No sales	..	..	..	Pacific Western Oil	(sh)	1,000,000	N.P.	....	.....	19½	5½	15	2⅞	8	3
3¾	⅛	4,000	1	⅞	1	Pantapec Oil	(sh)	1,595,500	N.P.	....	.....	4⅜	⅞	2	⅜	⅝	1/16
1⅞	¼	1,000	1⅛	⅞	⅞	Reiter-Foster	(sh)	388,584	N.P.	....	12- 2-29	5⅜	1	3⅛	¼	½	1/16
2¼	¼	100	⅝	⅝	⅝	Richfield Oil pfd. x.w.	(sh)	399,950	$25	....	.....	23½	6½	11	¼	1	⅛
4¾	⅝	100	1½	1½	1½	Ryan Consolidated	(sh)	296,931	N.P.	....	.....	8⅝	2	3	¾	2⅛	⅝
1	⅜	100	⅝	⅝	⅝	Salt Creek Consolidated	(sh)	1,286,300	$10	....	4- 1-31	2½	½	1⅜	⅛	⅞	⅛
9¼	3½	1,100	6	5⅞	5⅞	Salt Creek Producers	(sh)	1,496,859	$10	25c	2- 1-33	15¼	5¼	7¾	2¾	5½	2⅞
1½	¼	600	1/16	1/16	1/16	Sunray Oil	(sh)	1,163,185	$5	....	4-15-31	10	2	5¼	¼	⅝	¼
13	6¼	200	7	6⅞	7	Texon Oil & Land	(sh)	936,036	N.P.	25c†	12-30-32	19½	8	12⅞	2½	10½	4½
1½	⅛	4,100	1¼	⅞	1	Venezuelan Petroleum	(sh)	755,090	$5	....	2-15-30	4¼	⅜	1⅞	¼	1/16	⅛
3¾	1½	800	2½	2½	2½	Woodley Petroleum		$500,000	$1	....	3-31-29	5	½	3½	1⅛	2⅜	1¼

*Ex-dividend. †Plus extra dividend of 25 cents. ‡Payable in stock. §Paid in lieu of regular cash dividend of 2 per cent.

justed company," the old Cosden Oil Co. of Delaware having gone into receivership on November 8, 1930. The assets of the old company were acquired at a receivership sale on March 28 this year. In addition to the preferred and common stocks, the new company will have outstanding approximately $1,080,000 first mortgage 6 per cent serial bonds, due 1935-38, and $1,601,000 general lien five-year 6 per cent bonds, due May 15, 1938.

Mountain & Gulf Oil

Mountain & Gulf Oil has declared a dividend of 25 cents, payable on December 10 to stock of record November 20 on the 3,705,200 shares of $1 par stock, of which Argo Oil owns 95 per cent. The dividend is payable out of earnings in past years and partly out of surplus.

El Paso Natural Gas

El Paso Natural Gas Co. and subsidiaries reported gross revenues of $1,339,733 for 1932 and total income available for charges of $1,029,251. The latter figure included $147,005 profit on bonds retired.

For the 12 months ended August 31, this year preliminary report showed gross revenue of $1,317,844 and total income for charges of $1,054,647 including $187,105 profit on bonds retired.

Standard Oil Stocks on New York Curb

Quotations Compiled by Francis, Bro. & Co., Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ended Nov. 11)

1933 High	1933 Low	Week ended November 11 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Payable or last paid	1930 High	1930 Low	1931 High	1931 Low	1932 High	1932 Low
..	..	No sales	..	..	..	Borne Scrymser		$1,000,000	$25	....	10-15-30	25	11¼	16	6	7	6
39¾	25	100	36	36	36	Buckeye Pipe Line		$10,000,000	$50	75cQ	6-15-33	69	39⅞	56	30	35	17½
..	..	No sales	..	..	..	Chesebrough Mfg.		$3,000,000	$25	$1Q‡	6-29-33	184⅞	104¼	129½	75	90	53
11¾	2¼	13,900	11¼	10¾	11⅛	Creole Petroleum	(sh)	6,974,356	$5	....	.....	7⅞	3	3⅞	1⅝	3⅛	1⅝
..	..	No sales	..	..	..	Eureka Pipe Line		$5,000,000	$100	$1Q	8- 1-33	54¾	26	36	19	35	18
88¾	40	3,800	88¾	86¼	88½	Humble Oil & Refining		$74,365,725	$25	50cQ	7- 1-33	119	57¼	72	44¼	55	35⅝
15¼	6½	29,100	14½	12⅝	14½	Imperial Oil of Canada	(sh)	26,557,496	N.P.	12½cQ	9- 1-33	30	15	18¾	7⅝	10⅞	6¼
..	..	No sales	..	..	..	Indiana Pipe Line		$3,000,000	$10	15cS.A.	5-15-33	41	14½	21½	5½	7½	2¾
20¼	8⅞	28,700	20¼	19¾	20⅛	International Petroleum	(sh)	14,247,088	N.P.	28cQ§	6-15-33	24	11⅝	15½	7⅝	12¼	8
10	5½	200	7¼	7⅛	7⅛	National Transit		$6,362,500	$12.50	35cS.A.	6-15-33	22⅜	11½	17½	5	10½	6
4⅞	3	100	3¼	3¼	3¼	New York Transit	(sh)	500,000	$5	15cQ	4-15-33	21⅜	10½	14½	5⅞	6	2¼
6⅛	4¼	400	5⅜	5¼	5¼	Northern Pipe Line		$1,200,000	$10	25c	7- 1-33	54	26¼	35½	20	5½	3½
22⅛	11	900	17½	17	17¼	South Penn Oil		$30,000,000	$25	25cQ	3-31-33	45⅞	16½	23⅞	9¼	16½	9⅝
6	2¾	300	4	3⅞	3⅞	Southern Pipe Line		$1,000,000	$10	10cQ	3- 1-33	20⅞	8⅜	17	7	10	3¾
43	24½	50	43	43	43	Southwest Pennsylvania Pipe Line		$1,750,000	$50	$1Q	7- 1-33	64	32	42½	25	37	27
34	17	20,600	31½	30	31	Standard Oil of Indiana	(sh)	15,941,895	$25	25cQ	6-15-33	59⅞	30	38½	13½	25⅛	13⅛
19¼	8⅜	3,400	15⅝	15⅛	15½	Standard Oil of Kentucky		$26,069,830	$10	25cQ	6-15-33	40½	18⅝	23⅝	12½	15⅞	8⅝
..	..	No sales	..	..	..	Standard Oil of Nebraska		$4,770,550	$25	25cQ	9-20-33	48⅞	34⅝	36½	16	19	10¼
41	15½	400	28	27	27	Standard Oil of Ohio		$18,811,675	$25	37½cQ	1- 3-33	108½	43¼	62½	23	30⅛	15½
3	1	200	2⅞	2½	2⅞	Swan-Finch Co.	(sh)	34,480	$25	....	1-15-29	10	4	4½	1	2	1⅝

*Ex-dividend. †Unit of trading less than 100 shares. ‡Plus 50 cents extra. §Payable in Canadian funds.

Transactions in Oil Shares on New York Stock Exchange

Quotations Compiled by Francis, Bro. & Co., Members of the New York Stock Exchange and Associate Members of New York Curb, Kennedy Building, Tulsa, Okla.

(Complete record week ended Nov. 11)

1933 High	1933 Low	Week ended November 11 Sales	High	Low	Close	Stocks—		Outstanding capital	Par value	Div. rate	Payable or last paid	1930 High	1930 Low	1931 High	1931 Low	1932 High	1932 Low
47	18½	2,700	44	42½	43	Amerada Corp.	(sh)	774,875	N.P.	50cQ	7-31-33	31½	16½	23	11¼	22¾	12
..	..	No sales	..	..	..	Associated Oil		$34,356,180	$15	25cQ	.....	51	30	31	8¾	16½	6½
31⅞	12⅜	29,600	31¼	29⅝	30¾	Atlantic Refining		$67,416,050	$25	25cQ	6-15-33	51⅝	16⅝	23⅝	8⅝	21⅞	8⅝
11	3	13,500	8⅞	8⅛	8⅜	Barnsdall Corp. A		$11,293,895	$5	....	5-11-31	34	8⅝	14½	4	7	3⅝
28⅛	9	31,100	13½	11¾	12⅞	Columbia Gas & El.	(sh)	11,684,220	N.P.	20cQ§	5-15-33	87	30⅝	45⅝	11⅝	21	4¼
..	..	No sales	..	..	..	Colonial Beacon Oil	(sh)	1,444,970	N.P.	....	12-22-22	20⅜	8⅜	10½	7½	12½	9
15⅜	5	67,100	12½	11⅛	12¼	Consolidated Oil Corp.	(sh)	14,218,835	N.P.	....	.....	..	..	..	..	9	4
19⅝	4⅞	52,300	18½	17	18	Continental Oil of Delaware	(sh)	4,738,593	$5	....	12-15-27	30½	7¾	12	5	9⅜	3⅝
43¼	13¾	7,900	31½	29¼	30	General American Transportation		751,638	N.P.	25cQ	1- 2-33	111⅞	53½	73⅛	28	35¾	9½
27	4⅝	5,600	16½	14½	15¾	General Asphalt	(sh)	413,333	$10	....	6-15-32	71½	22⅜	47	9⅝	15½	4¾
38	8¼	4,000	25½	23	24½	Houston Oil		$24,968,600	$100	....	10-17-30	116⅞	29¼	68½	15¾	28¼	8¾
4½	1⅛	100	3	3	3	Indian Refining		$12,564,070	$10	....	10- 1-30	17	2	4⅝	1⅛	2¾	1
..	..	No sales	..	..	..	Louisiana Oil Refining	(sh)	1,309,069	N.P.	....	.....	12	3½	4½	1	2¼	½
4	½	100	2⅛	2⅛	2⅛	Maracaibo Oil	(sh)	330,000	N.P.	....	.....	10⅜	1⅜	3¾	½	1½	⅜
16	3¾	9,100	13⅛	11½	12¾	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	....	2-16-31	32	11	16¾	5	8⅞	3¾
28⅝	4	900	13½	11	13¼	National Supply of Delaware	(sh)	390,879	$25	....	5-15-31	124¾	60	70¼	5	13	3½
17⅝	4¾	34,500	15¾	14½	15½	Ohio Oil	(sh)	6,562,005	N.P.	....	12-15-32	32	16	19½	5¼	11	5
..	..	No sales	..	..	..	Pan American P. & T.	(sh)	3,416,082	$5	....	3-15-33	46½	42	35⅛	20	14	6
4¼	⅜	300	1¾	1½	1¾	Panhandle P. & R.	(sh)	198,770	N.P.	....	.....	12¾	1¾	4¼	⅝	1¼	⅛
18¾	4¾	36,100	16⅜	14⅜	16⅜	Phillips Petroleum	(sh)	4,156,908	N.P.	....	1- 2-31	44⅝	11½	16⅝	4	8⅛	2
1⅞	¼	1,000	⅞	¾	⅞	Pierce Oil Corp.		$29,622,831	$25	....	.....	2½	½	1½	¼	¾	⅛
2¾	⅝	700	1½	1⅜	1⅜	Pierce Petroleum	(sh)	2,500,000	N.P.	....	2-16-31	7⅛	1⅛	3⅜	½	1⅜	½
17⅝	6¾	18,100	15⅛	13¾	14⅝	Plymouth Oil Co.	(sh)	1,050,000	$5	75cA	.....	..	..	..	..	12½	8½
..	..	No sales	..	..	..	Prairie Oil & Gas		$61,035,800	$25	....	3-31-31	54	11¼	20⅜	4⅛	9½	3½
..	..	No sales	..	..	..	Prairie Pipe Line		$101,250,000	$25	....	6-30-31	60	16⅝	26½	5⅞	12¼	5½
2⅞	¼	17,100	1⅜	½	1⅜	Producers & Refiners		$37,438,950	$50	....	9-15-23	11⅞	1	6	1	1⅝	⅛
13	2	3,520	6⅛	3	5⅜	Producers & Refiners pfd.		$2,845,350	$50	....	5- 4-25	40	11½	16	3	9¾	1
15⅜	2½	25,300	13	11⅝	12¼	Pure Oil		$75,959,250	$25	....	9- 1-30	27¼	7⅝	11⅞	3¼	6½	2⅜
38	17⅝	6,800	38	36⅛	37⅛	Royal Dutch N. Y.	(sh)	611,303	....	80⅓cf†	8- 5-32	56½	36⅞	42⅝	13	23¾	12⅛
43⅜	15	10,700	35⅞	33½	35	Seaboard Oil of Delaware	(sh)	1,204,460	$4	15cQ	9-15-33	37	9⅜	20¾	5½	20⅜	6⅝
24¾	11¼	20	22	22	22	Shell Transport & Trading Co.		£23,985,000	£1	53cf†	7-22-32	48⅜	26	34	5	16⅜	8
11⅝	4	19,200	9	8¼	8⅝	Shell Union Oil	(sh)	13,066,497	N.P.	....	6-30-30	25½	5¼	10¼	2½	8¾	2½
61	28½	1,400	59⅞	56½	59	Shell Union Oil pfd.	(sh)	400,000	$100	....	7- 1-31	106¼	55	78	15	65¼	18
12⅜	4⅞	3,500	10⅞	10	10⅜	Simms Petroleum	(sh)	600,000	$20	25cQ	1-16-32	37	5⅝	11	3½	7½	3¼
9⅞	3	2,900	9	8⅝	9	Skelly Oil		$27,441,250	$25	....	12-15-30	12	10½	12⅞	2	5¾	2½
57½	22	400	55⅛	54	54	Skelly Oil pfd.	(sh)	119,800	$100	....	5- 1-31	99¾	42	62	10	33½	12
15½	6	103,500	14¼	13	14¼	Socony-Vacuum		$792,711,738	$25	....	3-15-33	106⅜	98	106	87⅛	12¼	5¼
102¾	92½	1,400	102½	99¾	99¾	Standard Oil Export pfd.	(sh)	764,885	$100	$2.50SA.	12-31-32	..	..	21	8⅜	100½	81
44⅞	19½	31,100	43	40½	42⅞	Standard Oil of California	(sh)	13,102,900	N.P.	25cQ	6-15-33	75	42½	51⅜	23¼	31⅞	15⅛
35	12⅜	1,500	34⅜	34¼	34⅜	Standard Oil of Kansas		$8,000,000	$25	....	3-16-31	49	14⅜	19	7¾	16½	7
44¼	22⅜	51,700	44¼	42⅝	44⅛	Standard Oil of New Jersey		$637,961,700	$25	50cSA	6-15-33	84⅞	32½	52½	26	37⅜	19⅞
50	35	400	48¾	48	48¾	Sun Oil	(sh)	1,531,422	N.P.	25cQ	6-15-33	70	39	45¼	26¾	39⅞	24¾
4½	¾	2,200	2⅝	2¼	2½	Superior Oil Corp.	(sh)	776,979	N.P.	....	12-20-30	9⅜	¾	1⅜	¼	2	⅛
30⅛	10¾	15,400	25¾	24	25⅝	The Texas Corporation		$246,204,900	$25	25cQ	7- 1-33	60½	28¼	36¼	9⅞	18¼	9¼
6½	1⅜	4,800	3⅞	3½	3⅞	Texas Pacific Coal & Oil Co.		$9,304,890	$10	....	12-31-29	14½	4	6½	1⅞	4	1½
21	9¼	100	21	21	21	Tide Water Oil	(sh)	2,190,323	N.P.	....	12-31-32	31	13	18	9⅞	10	5
77	45	200	75	74½	75	Tide Water Oil pfd.	(sh)	199,446	N.P.	....	2-15-33	94⅞	71	83	30	62	30
11¾	3½	21,000	10⅝	9⅝	10⅜	Tide Water Associated	(sh)	5,611,100	N.P.	....	2-16-31	17¾	5⅞	9	2½	5⅝	2
59½	23½	2,000	59½	56½	59½	Tide Water Associated pfd.		$73,284,500	....	....	1- 1-33	89¾	55	68	20½	60	20
23⅜	8½	9,800	20⅝	19⅛	19½	Union Oil of California	(sh)	4,386,070	$25	25cQ	8-10-33	50	10½	26⅝	11	15⅜	8
22¾	10½	500	17½	16½	17½	Union Tank Car	(sh)	1,254,048	N.P.	30cQ	6- 1-33	38½	23	25⅛	16	19¼	11⅜
4⅞	⅝	1,300	2⅛	1⅞	2⅛	Warner-Quinlan	(sh)	632,948	N.P.	....	7- 1-30	27	4¼	7⅜	⅞	2¼	½
5½	2	1,100	3½	3⅛	3⅜	Wilcox Oil & Gas	(sh)	428,967	$5	...	5-10-28	21	6½	9⅜	2¾	8¾	2¾

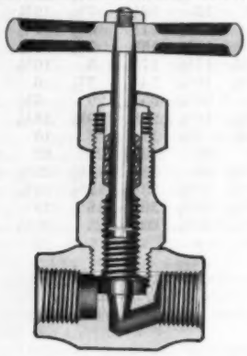
*Ex-dividend. †Interim dividend for 1931. §Payable in 5% convertible preferred stock. A—Paid this year; no regular rate.
In comparing highs and lows for the several years in the three tables, it will be necessary to take into consideration cases where there have been stock split-ups.

XUM

NEW AND IMPROVED EQUIPMENT

Wide Range of Service Is Given by New Crane Valve

The Crane Co., 836 South Michigan Avenue, Chicago, has placed on the market a newly designed line of high pressure needle valves which have been made as small and compact as possible without sacrificing efficiency or quality. Made from carbon steel or exelloy (a high chrome, stainless iron), their sturdy con-



struction makes them suitable for service in all industries where measuring pressures or volume of flow of fluids or gases is done, and where a gradual release of pressure is necessary to prevent damage to such delicate instruments as pressure gauges and meters.

Particularly adaptable to high pressure gauge lines on oil service, these valves can be used also on water or gas lines, orifice meters, regulator leads and bypass connections in power, industrial or chemical plants, in refineries, or on gas and gasoline distributing systems where high pressures at relatively low temperatures are encountered.

Practical improvements include long pipe threads, long stem threads with liberal engagement in all positions, unusually deep stuffing-box with gland, tight metal-to-metal bonnet joint, long tapered plug disc, extra long bonnet thread.

"40 YEARS IN DISTILLATION"

An attractive brochure describing "40 Years in Distillation" has been released by The Lummus Co., 50 Church Street, New York. The company over this period has been one of the pioneer designers and builders of alcohol and chemical plants and in recent years has become an important factor in the design and installation of complete equipment for refinery processing. The Lummus company's entry into the petroleum refining field started in 1920 when it made one of the first installations of modern fractionating equipment of the petroleum industry at a California refinery. In 1922 the company designed and installed one of the first continuous units for the distillation of crude oil. It is constantly carrying on research and development work. Its experimental equipment includes a semicommercial unit located in Bayonne, N. J., with five completely equipped towers and heaters having an output of 100 bbls. daily. Several pages of the brochure are devoted to pictures showing the various types of distillation equipment installed in refineries. One of the recent processes developed by the company is the Coubrough process for the manufacture of lubricating oils and asphalt. The Lummus Co. broadened its activities in 1931 by alignment with the Babcock & Wilcox Co. and Superheater Co. and have made available to its customers the manufacturing and fabricating facilities of these two organizations.

Notes About Trade Literature

Graver elevated steel tanks are the subject of a four-page illustrated bulletin issued by the Graver Tank & Manufacturing Corp., 332 South Michigan Avenue, Chicago. Another bulletin of 12 pages tells about Graver water filters.

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"Painting Brick, Stucco and Concrete" and "Red-Lead Paid for Structural Steel" are among interesting articles in the current number of the Dutch Boy Quarterly, published by the National Lead Co., 111 Broadway, New York.

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A specification sheet prepared by the Euclid-Armington Road Machinery Co., Cleveland, Ohio, describes briefly the new Euclid front-end loader.

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The new catalog, No. 6,702, published by the Brown Instrument Co., Wayne and Roberts Avenues, Philadelphia, Pa., describes 19 features of the new Brown recording thermometer and gauge.

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The booklet, "Alcoa Aluminum for Truck Bodies," just published by the Aluminum Co. of America and sent on request, is a new edition of an earlier booklet. The engineering data are much more detailed; suggested designs for various types of truck bodies, supplemented with construction drawings printed on paper suitable for blueprinting, are included. The case histories, based on many operators' records, point to the economic advantages of the metal.

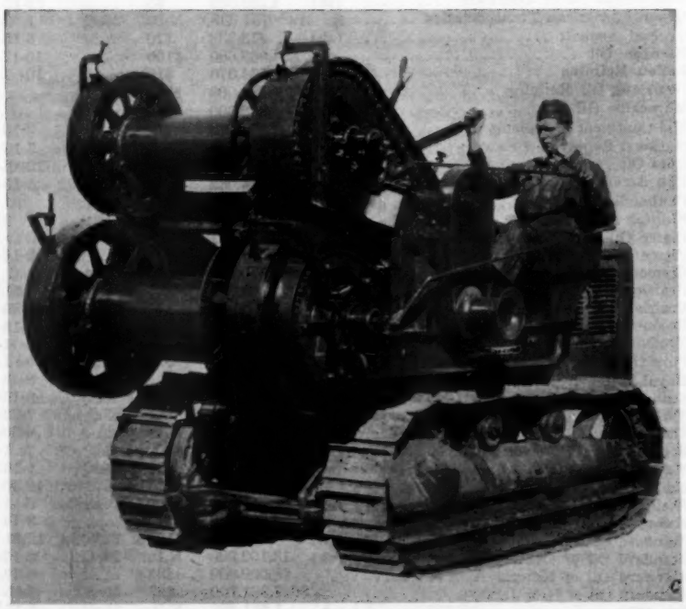
—

The Worthington Pump & Machinery Co., Harrison, N. J., has for distribution an eight-page bulletin devoted to Worthington compressors, single horizontal, single-stage, steam and motor driven.

ANNOUNCES NEW HEAT BLOWER

The Breuer Electric Manufacturing Co., 852 Blackhawk Street, Chicago, announces a new Tornado heat blower for use with compressed air. Efficiency is combined with light weight in this new unit, 650° at the nozzle. One switch turns on air and electricity at the same time; equipped with Schrader valve to fit any air line. This blower is valuable for melting grease in differentials and transmissions, thawing out gas or oil lines, and brake drums, and for drying coils, timers and spark plugs.

Allsteel Puts New Double-Drum Winch on Market



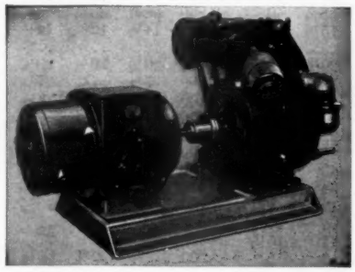
The Allsteel Products Manufacturing Co., Wichita, Kans., has put on the market its new double-drum HB-35 oil-field servicing winch for mounting on "Caterpillar" Thirty-five Diesel or gasoline-powered wide gauge or standard tractor. These units, like all the company's units, are equipped with Wedge-action brakes, alloy brake flanges and Timken bearing drums. The parts in both drum assemblies are standard parts and standard drums used in other models of Allsteel's standard skid winches for mounting on trucks.

These double-drum winches are built in two larger sizes, for the "Caterpillar" Fifty and "Caterpillar" Seventy-five tractors, as well as for Allsteel HS, KS and MS series skid winches, thereby furnishing a size double-drum unit for any depth wells.

The HB-35 lower drum has 7,400 feet nine-sixteenths inch capacity; the upper drum has 4,300 feet nine-sixteenths inch capacity, and is the correct size for wells up to 4,000 feet in depth. The weight of this unit, exclusive of tractor, is only 5,400 pounds.

Harnischfeger Introduces Portable Lighting Plants

An interesting development in the field of electric generating units recently perfected by the Harnischfeger Corp., Milwaukee, Wis., is a line of portable lighting plants. The small, heavy-duty line of lighting units consists of a one or two



cylinder gasoline engine directly coupled to a compound-wound, continuous generator. Push button or manual starting is available.

Capacities range from 400 watts to 3 K.W. generating 35 or 120 volts idirect current. Greater capacities are provided for by four and six-cylinder gasoline generator sets with a current range of 1½ to 60 K.W. In addition to these gasoline driven sets, Diesel power is also available.

Made Distributors for the Improved Bettis Protector

Buck & Stoddard, Inc., 607 Richfield Building, Los Angeles, Calif., have been appointed exclusive distributors for Bettis protectors and they have made several improvements in both design and material.

The improved protector is longer than the original, making possible a tighter grip on the pipe. A short, smooth space is left between the end of the protector and the point where the interior indentations begin. This feature is said to produce a practically perfect seal at the ends of the protector, preventing the intrusion of foreign particles between the protector and the pipe.

AGENTS FOR STRUTHERS-WELLS

The Yuba Manufacturing Co., 351 California Street, San Francisco, Calif., has been appointed sales representative for the Struthers-Wells division of the Struthers-Wells Titusville Corp., Warren, Pa., and will handle the sale of Struthers-Wells pressure vessels, oil refinery and chemical process equipment in California, Washington and Oregon. O. E. Berg, with offices in the Gulf Building, Houston, Tex., has been appointed similarly as the company's representative in Oklahoma, Louisiana and eastern Texas. The Mine & Smelter Supply Co., 1422 Seventeenth Street, Denver, Colo., has been appointed for the Rocky Mountain district.

EC&M BEARING THERMOSTAT

For protecting motor-driven and other types of rotating machinery from breakdowns due to overheated bearings, the Electric Controller & Manufacturing Co., 2720 East Seventy-ninth Street, Cleveland, Ohio, announces the EC&M bearing thermostat. These thermostats are particularly designed for use in connection with automatic pumping stations, motor-driven fans, automatic electric substations, conveyor systems, refrigerating machines, compressors, etc.

Oklahoma-Kansas and Eastern Monthly Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for August Runs

Company—	Month (bbls.)	Dy.av. (bbls.)
Gulf Pipe Line Co.	1,545,803	49,865
Texas P. L. Co.	662,618	21,407
Empire P. L. Co.	2,637,662	85,086
Magnolia P. L. Co.	1,428,449	46,079
Cosden P. L. Co.	1,003,911	32,384
Stanolind P. L. Co.	3,720,000	120,000
Oklahoma P. L. Co.	2,898,828	93,511
Other lines	8,940,427	288,401
Total August	22,838,708	736,733
Total July	22,588,914	728,675
Difference	249,794	8,058

Shipments

Gulf P. L. Co.	1,424,208	45,942
Texas P. L. Co.	1,020,156	32,908
Empire P. L. Co.	2,067,140	66,682
Magnolia P. L. Co.	1,333,366	43,012
Cosden P. L. Co.	864,051	27,873
Stanolind P. L. Co.	4,086,048	131,808
Oklahoma P. L. Co.	2,856,048	92,130
Other lines	6,231,000	201,000
Total August	19,882,017	641,355
Total July	19,042,214	614,265
Difference	839,803	27,090

Stocks

Sinclair Prairie Oil Mktg. Co.*	30,086,000
Gulf P. L. and Gypsy Oil Co.	7,853,347
Texas Co.	4,269,767
Empire P. L. Co.	6,829,017
Mid-Continent Pet. Corp.	2,609,044
Magnolia Pet. Co.	7,340,446
Stanolind Crude Oil Pur. Co.	13,897,000
Oklahoma Pipe Line Co.	1,192,668
Carter Oil Co.	3,569,467
Other lines	18,949,000
Total August	94,496,755
Total July	92,846,178
Difference	1,650,577

*Estimated. Stanolind Pipe Line Co. shipments include Texas crude oil.

EASTERN PIPE LINE REPORT FOR MONTH OF OCTOBER

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for September and October:

	Sept., 1933	Oct., 1933
Nat. Transit	278,357.47	291,401.82
S. W. Pa. P. L.	71,457.72	76,986.05
Eureka P. L.	275,260.78	299,836.34
Buckeye P. L. (Macksburg)	245,044.65	261,510.57
Buckeye P. L. (Cleveland)	10,137.70	11,549.86
Buckeye P. L. (Lima, etc.)	66,050.77	70,474.35
Stoll Oil Ref.	26,433.00	26,919.00
Bradford Tran.	422,999.86	445,585.36
N. Y. Transit	31,777.52	37,133.38
Tide Water P. L.	21,300.98	22,491.64
Pure Oil	737,296.96	754,603.46
Daugh'ty Ref.	520.00	794.00
Valvoline Pipe	75,415.56	86,959.65
Other companies	233,760.47	239,032.00
Total	2,495,813.44	2,625,277.50
Daily average	83,193.78	84,686.37

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for September and October:

	Sept., 1933	Oct., 1933
Nat. Transit	513,071.68	564,777.36
S. W. Pa. P. L.	480,278.79	422,939.38
Eureka P. L.	279,563.41	287,229.58
Buckeye P. L. (Macksburg)	259,900.01	256,564.17
Buckeye P. L. (Cleveland)	1,463.24	1,941.50
Buckeye P. L. (Lima, etc.)	1,548,524.14	1,948,096.57
Indiana P. L.	892,002.38	893,176.98
Bradford Tran.	378,457.87	356,110.56
Southern P. L.	29,270.09	29,977.38
Tuscarora Dev.	253,395.59	308,172.65
N. Y. Transit	183,857.99	182,694.85
Northern P. L.	151,479.61	138,692.91
Tide Water P. L.	514,883.41	326,248.96
Pure Oil	683,718.94	686,421.04
Valvoline P. L.	37,582.65	43,797.32
Other companies	179,942.94	198,403.73
Total	6,387,393.74	6,645,225.84
Daily average	212,913.12	214,362.17

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of September and October:

	Sept., 1933	Oct., 1933
Nat. Transit	455,553.29	418,056.64
S. W. Pa. P. L.	367,913.26	316,822.16
Eureka P. L.	819,400.61	802,223.18
Buckeye P. L. (Macksburg)	303,848.61	268,025.63
Buckeye P. L. (Cleveland)	43,672.06	42,574.98
Buckeye P. L. (Lima, etc.)	2,188,677.75	2,381,039.36
Indiana P. L.	487,046.74	430,428.49
Bradford Trans.	151,875.89	245,317.79
Southern P. L.	117,350.37	136,034.46
Tuscarora	6,538.41	6,149 58
N. Y. Transit	97,125.14	109,286.44
Northern P. L.	172,967.67	195,138.67
Tide Water P. L.	708,543.08	707,797.68
Pure Oil	442,352.45	549,670.40
Valvoline	111,015.73	124,300.28
Other companies	127,253.17	117,032.94
Total	6,601,134.13	6,852,809.18
Decrease	16,142.47	
Increase		251,675.05

Grades of Oil

The following tabe shows the amount of the different grades of oil held by the eastern pipe lines at the close of September and October, showing gross stocks of the above fields:

	Sept., 1933	Oct., 1933
Pennsylvania	2,426,155.20	2,539,529.90
Lima	453,465.05	442,727.34
Kentucky	563.32	
Mid-Continent	2,326,914.57	3,368,606.00
Illinois	10,297.73	10,631.83
Michigan	383,738.26	491,314.11
Total	6,601,134.13	6,852,809.18

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1930	1931	1932	1933
Jan.	75,907	53,939	53,501	54,493
Feb.	79,256	55,163	55,498	58,140
Mar.	76,688	54,331	57,199	59,417
Apr.	84,536	54,914	57,348	61,812
May	70,546	53,344	59,105	65,755
June	75,430	54,110	64,371	67,370
July	68,921	50,723	63,402	68,100
Aug.	54,291	51,503	67,676	77,537
Sept.	56,595	61,345	65,423	83,193
Oct.	58,179	65,595	65,960	84,686
Nov.	52,332	59,819	60,602	
Dec.	53,999	61,335	57,401	

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1930	1931	1932	1933
Jan.	217,623	175,269	186,551	198,996
Feb.	224,355	183,494	169,856	187,928
Mar.	228,846	189,508	188,793	183,632
Apr.	241,845	191,450	202,036	181,940
May	248,383	199,247	201,404	199,671
June	234,401	221,155	201,632	211,980
July	207,094	211,632	202,859	213,417
Aug.	205,506	224,166	187,839	211,123
Sept.	193,999	217,537	170,524	212,913
Oct.	157,675	210,831	188,504	214,362
Nov.	146,638	196,425	189,626	
Dec.	143,001	176,241	186,135	

Gross Receipts

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1931	1932	1933
Jan.	11,831,092	9,023,914	7,603,270
Feb.	11,506,489	8,974,350	7,302,746
Mar.	11,012,162	8,802,192	7,279,843
Apr.	11,044,481	8,908,461	7,212,548
May	10,728,239	8,835,726	7,016,621
June	9,903,349	8,732,724	6,766,033
July	9,569,849	8,176,956	6,713,942
Aug.	9,192,457	8,128,576	6,617,276
Sept.	8,492,421	7,895,421	6,601,134
Oct.	8,417,694	7,421,620	6,852,809
Nov.	8,830,386	7,116,200	
Dec.	9,119,032	7,139,420	

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

	Bbls.
Gross stocks, Nov. 1	555,592.53
Runs from wells	435,820.24
Other receipts	21,337.65
Regular deliveries	278,352.62
Other deliveries	157,539.38

The amount of Illinois oil run by the Tide Water Pipe Co. in October was 22,491.64 bbls. Deliveries were 21,361.37 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1933—	Runs	Deliveries
October	458,311.88	299,714.00
1932—		
January	500,177.12	246,624.10
February	482,561.50	186,010.30
March	565,538.70	270,617.75
April	461,920.92	285,817.98
May	521,884.64	279,859.83
June	501,875.26	243,703.70
July	466,635.89	234,537.18
August	476,095.53	307,325.89
September	436,529.00	229,994.39
October	332,680.67	352,620.34
November	346,880.27	338,351.23
December	336,072.57	317,749.63
1933—		
January	344,054.84	314,108.93
February	306,520.61	294,340.35
March	385,665.57	314,514.48
April	311,146.72	356,455.50
May	361,901.38	334,420.38
June	420,865.87	350,984.36
July	455,997.46	423,608.53
August	479,798.24	431,176.90
September	457,408.62	376,502.96

Tide Water Pipe Co., Ltd., also delivered in October, 135,400.50 bbls. of Oklahoma oil.

Average Daily Imports of Crude and Refined Oil at Principal United States Ports

Average barrels per day in 1932-33—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
September	5,100	3,200	57,900	12,167	10,066	87,433	.....	.....	.....	.....	.....	87,433
October	14,033	.....	72,193	30,645	7,129	124,000	.....	.....	.....	.....	2,000	126,000
November	14,167	.....	49,367	19,233	5,900	92,367	.....	.....	.....	.....	2,133	94,499
December	14,258	2,065	84,323	28,162	9,256	138,064	.....	.....	.....	.....	5,226	143,290
January	7,644	4,855	64,194	25,710	6,613	108,516	.....	.....	.....	.....	548	109,064
February	7,682	4,789	120,490	12,610	10,823	156,393	.....	.....	.....	.....	2,357	158,750
March	7,710	4,290	101,258	36,292	16,000	165,290	.....	.....	.....	.....	.....	165,290
April	10,000	6,700	73,433	32,267	9,967	132,367	.....	.....	.....	.....	.....	132,367
May	4,258	2,194	62,484	22,548	3,355	94,839	.....	.....	.....	.....	4,355	99,194
June	4,833	.....	46,967	29,967	5,233	87,000	.....	.....	.....	.....	.....	87,000
July	10,645	2,452	91,258	33,161	2,968	140,484	.....	.....	.....	.....	6,194	146,678
August	13,774	2,452	112,193	33,484	6,742	168,645	.....	.....	.....	.....	2,161	170,806

Average Daily Receipts of California Crude and Refined Oil at Atlantic and Gulf Ports

Average barrels per day in 1932-33—	Atlantic Ports: Baltimore	Boston	New York	Philadelphia	Others	Total	Gulf Coast Ports: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
September	2,900	.....	5,000	11,633	7,967	27,500	.....	.....	.....	.....	.....	27,500
October	2,387	1,226	14,452	9,355	9,193	36,613	.....	.....	.....	.....	.....	36,613
November	4,667	.....	21,700	7,767	2,366	36,500	.....	.....	.....	.....	.....	36,500
December	4,129	.....	15,678	5,322	8,226	33,355	.....	.....	.....	.....	4,903	38,258
January	968	1,484	20,903	3,742	18,064	45,161	.....	.....	.....	.....	.....	45,161
February	9,106	1,643	14,250	10,966	11,500	47,464	.....	.....	.....	.....	2,643	50,107
March	5,065	.....	16,516	9,958	13,935	45,474	.....	.....	.....	.....	7,464	52,938
April	6,000	.....	14,500	7,733	4,934	33,167	.....	.....	.....	.....	4,900	38,067
May	4,194	.....	15,255	14,393	5,871	39,613	.....	.....	.....	.....	4,452	44,065
June	1,267	.....	5,300	11,767	7,667	26,000	.....	.....	.....	.....	4,933	30,933
July	3,773	.....	17,323	24,097	15,194	60,387	.....	.....	.....	.....	.....	60,387
August	2,484	1,742	12,065	15,032	7,129	38,452	.....	.....	.....	.....	.....	38,452

Gross Production of Crude Oil in the United States for 12 Months

(In barrels of 42 gallons)

1932-33—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
August:	Month	14,839,951	12,743,666	36,924,953	3,046,959	1,062,897	1,870,764	2,412,536	3,872,000	68,775,726
	Daily average	478,708	411,086	868,547	98,289	34,287	60,347	77,856	124,935	2,154,056
September:	Month	14,351,140	11,775,280	37,366,516	2,970,750	1,019,250	1,939,161	2,289,300	3,618,000	65,249,396
	Daily average	478,371	390,176	912,217	99,524	33,975	64,305	76,310	120,599	2,174,990
October:	Month	14,627,663	11,915,811	37,213,333	2,892,486	1,019,331	1,963,063	2,354,444	3,814,000	65,761,330
	Daily average	471,860	384,381	877,866	93,306	32,901	63,325	73,724	123,032	2,119,394
November:	Month	14,142,389	11,340,930	36,155,652	2,841,780	1,030,600	1,962,943	2,169,885	3,678,000	63,211,979
	Daily average	471,413	378,031	871,855	94,726	34,020	65,431	72,323	119,367	2,107,066
December:	Month	14,595,028	11,637,171	33,487,818	2,777,879	1,037,539	1,966,481	2,067,855	3,694,000	61,262,771
	Daily average	470,807	375,393	757,673	89,609	33,469	63,435	66,705	119,161	1,976,251
January:	Month	14,460,282	12,550,784	36,115,932	2,871,282	993,457	2,021,117	2,341,610	3,112,000	64,366,464
	Daily average	466,461	404,864	842,449	92,622	32,047	65,197	72,310	100,387	2,076,338
February:	Month	13,107,043	12,670,992	25,092,383	2,801,512	880,208	1,793,443	2,096,612	2,747,000	61,089,193
	Daily average	468,109	448,964	896,156	100,054	31,436	64,051	74,879	98,011	2,181,757
March:	Month	13,414,980	15,455,236	34,242,444	3,604,539	943,702	2,070,695	2,371,469	3,118,000	75,221,065
	Daily average	432,741	498,556	1,104,595	116,276	30,442	66,797	76,499	100,581	2,426,486
April:	Month	14,262,943	11,720,010	27,306,582	3,492,990	909,120	2,156,736	2,209,470	3,017,000	65,074,851
	Daily average	475,431	390,667	910,219	116,433	30,304	71,891	73,649	100,567	2,169,162
May:	Month	14,817,633	13,521,580	49,151,776	3,277,103	928,667	2,116,296	2,294,558	3,177,000	89,284,613
	Daily average	477,985	436,180	1,585,541	105,713	29,957	68,268	74,018	102,161	2,880,149
June:	Month	14,344,654	14,339,070	39,907,737	3,210,150	901,770	2,009,831	2,239,650	3,057,000	80,009,862
	Daily average	478,155	477,969	1,330,258	107,035	30,059	66,994	74,655	101,900	2,666,995
July:	Month	15,140,828	18,520,795	37,632,049	4,065,130	991,008	2,127,667	2,477,148	3,474,000	84,432,645
	Daily average	488,414	597,445	1,213,647	131,230	31,968	68,957	79,908	113,065	2,723,534
Total 12 months		172,104,534	158,021,325	370,588,693	37,855,560	11,708,149	23,998,197	27,125,337	40,279,000	841,680,795

XUM

Carbon Black NRA Code Is Tentatively Revised

WASHINGTON, D. C., Nov. 20.—The carbon black industry code has been amended tentatively at a hearing on changes in hours of labor requested by the labor advisory board of the NRA. Representatives of the Natural Gas Products Association, which submitted the code, agreed to the change in labor hours subject to approval by a vote of their association.

The amendment fixes an average for common labor of not more than 42 hours a week in any six weeks' period, a 48-hour week and an eight-hour day, except in emergencies involving safety or mechanical breakdowns.

No objection was made to the wage scale for laborers of 40 cents an hour in Louisiana, 50 cents in Oklahoma, and Stephens County, Texas, and 55 cents in the Texas Panhandle where 70 per cent of the carbon black is produced.

W. A. FRASER DIES

TORONTO, Ontario, Nov. 18.—With the death at Toronto recently of William Alexander Fraser in his seventy-fifth year there terminated a spectacular career, begun as an oil driller and ended as a novelist. Born in Nova Scotia, Mr. Fraser was educated in New York, later returning to Canada where he graduated in engineering. He drilled in the western Ontario fields, and later in India and Burmah. In 1897 he was employed by the federal government to drill the famous gasser at Pelican Rapids in northern Alberta, which, capped at the time, subsequently broke loose and burned wide open for 25 years.

SUMMARY OF STATEMENTS MADE NOVEMBER 10, 1933, RELATING TO BUSINESS OF VARIOUS PIPE LINES FOR MONTH ENDING OCTOBER 31, 1933

	Gross stocks	Runs from wells	Other receipts	Regular deliveries	Other deliveries
Nat Transit	418,056.64	291,401.32	916,610.83	564,777.36	666,148.39
S. W. Pa. P. L.	316,822.16	76,986.05	763,253.46	422,939.38	463,098.32
Eureka P. L.	802,223.18	299,836.34	332,326.46	287,229.58	340,281.55
Buckeye P. L. (Macksburg)	268,025.63	261,510.57	122,752.79	256,546.17	118,643.53
Buckeye P. L. (Lima, etc.)	2,381,039.86	70,474.35	2,707,980.56	1,592,773.01	969,341.69
Buckeye P. L. (Cleveland)	42,574.96	11,549.86	202,650.47	1,941.50	212,505.22
Indiana P. L.	430,438.49	.. ..	1,255,579.52	893,175.98	405,445.60
Southern P. L.	136,034.46	.....	132,557.54	29,977.38	79,528.57
Bradford Trans.	245,217.79	445,585.36	.....	356,110.56	.....
N. Y. Transit	109,286.44	37,133.38	156,749.18	182,694.85	.....
Southern P. L.	198,138.67	.....	512,283.07	138,692.91	345,050.40
Tide Water P. L.	707,797.68	22,491.64	.....	326,248.96	.....
Tuscarora Dev.	6,149.58	.....	.....	308,172.65	.....
Valvoline P. L.	124,300.28	86,959.65	.....	43,797.22	28,274.38
Total October 31	6,186,105.84	1,603,292.02	7,102,743.88	5,405,077.51	3,628,318.65
Total September 30	6,031,528.51	1,497,803.01	6,530,160.38	5,523,731.86	3,341,756.77
Difference	154,577.33	106,126.01	572,583.50	118,654.35	286,561.88

Wildcat Operations in Gulf Coast

(Continued from Page 48)

Texas Gulf Prod. Co.'s No. 2-B Barber (W.O.), Henry Griffith League, 320 ft. W SE cor., 70 ft. W of S line ..... Comp. 1,250 bbls.; 5/8-in. choke, 5,212 ft.

Texas Gulf Prod. Co.'s No. 3 Fitzgerald, Henry Griffith League, 300 ft. W line, 80 ft. S line ..... Drlg. rock 4,700 ft.

Texas Gulf Prod. Co.'s No. 2 Wilburn, 50 ft. out of the upper SE cor. of lease, Wm. Hodges Sur. ..... Drlg. rock 698 ft.

Yount Lee Oil Co.'s No. 21 Chambers County (W.O.), Wm. Bloodgood Sur. ..... Drlg. sand 5,058 ft.

BIG CREEK—FORT BEND COUNTY

Edwards Drlg. Co.'s No. 1 J. A. P. Davis ..... Comp. 25 bbls. daily; 3/8-in. choke, 3,126 ft.

Gulf Stream, Inc.'s No. 1 A. H. Theis, 236 ft. E of old No. 4 A. H. Theis in line, Mitchell Young Sur. ..... Drlg. sand 2,832 ft.

McPhail et al's No. 1 Wheat ..... Drlg. sand 2,458 ft.

BLUE RIDGE—FORT BEND COUNTY

San Jacinto Oil Co.'s No. 2 Blakely-E, Drew Sur., 100 ft. E, 150 ft. N of No. 1 Blakely ..... No report.

Sheffield, Teishar & Cady's No. 2 Blakely, E. Drew Sur., 50 ft. N line, 270 ft. W line (W.O.) ..... Comp. 30 bbls. per day 2,857 ft.

NASH—FORT BEND COUNTY

Harrison Oil Co. and Abercrombie Oil Co.'s No. 16 Nash, 296 ft. E, 827 ft. S of lease, T. H. Allsbury Sur. ..... Drlg. shale 4,735 ft.

RABBS RIDGE—FORT BEND COUNTY

Humble O. & R. Co.'s No. 6-A Gubbles ..... Drlg. gumbo 1,860 ft.

Humble O. & R. Co.'s No. 9 M. Gubbles, Sam Kennedy Sur., 814 ft. SE of No. 7 ..... Drlg. shale 5,235 ft.

Humble O. & R. Co.'s No. 9-A George, J. Rabb Sur., 1,527 ft. E of No. 4-A ..... Drlg. lime 3,610 ft.

Humble O. & R. Co.'s No. 21 Lockwood & Sharp, John Rabb Sur. ..... Drlg. shale 5,287 ft.

West-Len Oil Co.'s No. 1 Mulahill, 300 ft. N of S line, 300 ft. W of E line ..... Drlg. out cmt. 5,416 ft.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 37 J. M. Moore, 4,842 ft. W line of J. Frazier Sur., 275 ft. E at right angles to lease .. Drlg. shale 3,486 ft.

SUGARLAND—FORT BEND COUNTY

Dewalt Oil Co.'s No. 1 Peterson ..... Derrick.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 2 Broussard-Orme, Martin Dunman Sur., 300 ft. S of No. 1-B Cade ..... Drlg. hard sand 3,729 ft.

Yount Lee Oil Co.'s No. 38 Cade, 600 ft. NW of No. 1-B Cade, 755 ft. from No. 1 Smith, N. Fitzsimmons Sur. ..... Drlg. sand 4,363 ft.

Yount Lee Oil Co.'s No. 37 Cade, N. Fitzsimmons Sur., 600 ft. S of No. 36 ..... Drlg. sand 5,316 ft.

Yount Lee Oil Co.'s No. 1-B Smith ..... Drlg. salt 4,855 ft.

Yount Lee Oil Co.'s No. 19 Smith, Martin Dunman Sur., 150 ft. N at right angles from center of line between 14 and 15 ..... Drlg. sand 4,202 ft.

ARRIOLA—HARDIN COUNTY

Republic-Houston Oil Co.'s No. 5 Arriola, 400 ft. NE of No. 4 Arriola, Arriola Sur. ..... Comp. 1,200 bbls.; 1/4-in. choke, 4,190 ft.

BATSON—HARDIN COUNTY

Danciger O. & R. Co.'s No. 2 Hooks, W. Donoho Sur., 330 ft. E of C of W line, Blk. 24 ..... Drlg. lime 3,890 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 103 fee, C. F. S. Jordit Sur., 50 ft. N of No. 96 ..... Drlg. gumbo 695 ft.

Sesmo Oil Co.'s No. 1 Caswell, 940 ft. S of NW cor. and 600 ft. from E line, B.B.B.&C. Sur. ..... Drlg. gumbo 1,965 ft.

SOUR LAKE—HARDIN COUNTY

Arlis Pet. Co.'s No. 1 Sour Lake Bank, H.&T.C. Sur., NW cor. Blk. 11, Sec. 69 ..... T.D. 2,050 ft.; standing.

GOOSE CREEK—HARRIS COUNTY

Gulf Prod. Co.'s No. 17-A Tabb, Wm. Scott Sur., 1,288 ft. N line, 50 ft. E line (W.O.) ..... Drlg. shale 4,418 ft.

McPhail & Atkins' No. 1 Harral, Wm. Scott League, 600 ft. W and N from Humble's No. 1 Harral ..... Derrick.

Smith-Faust's No. 1 Washington-Texas Prod. Co., Wm. Scott Sur., 200 ft. W of E line, 75 ft. S of N line, 3 acres ..... T.D. 2,065 ft.; cmtd. csg.

HUMBLE—HARRIS COUNTY

Texas Co.'s No. 27 House, M. O. Owens Sur., 430 ft. NW of No. 8 ..... Drlg. shale 2,350 ft.

Wilson Pet. Co.'s No. 1 Cicero (W.O.) ..... Fishing 3,700 ft.

MYKAWA—HARRIS COUNTY

Crown-Framer Oil Co.'s No. 3 Minnetex, 100 ft. N line, 100 ft. E line, of W½ Blk. 251, Wm. Lovett, Sur. (W.O.) ..... Pulling screen.

PIERCE JUNCTION—HARRIS COUNTY

Gulf Prod. Co.'s No. 37 Taylor, 980 ft. S, 975 ft. W of NW cor. J. Hamilton Sur. No. 52 ..... Drlg. lime 2,461 ft.

Rio Bravo Oil Co.'s No. 25-A Settegast, 625 ft. W, 525 ft. N of SE cor. A lease, J. Kopman Sur. (W.O.) .... T.D. 4,126 ft.; set whipstock 3,-823 ft.; milling out.

TOMBALL—HARRIS COUNTY

Amerada Pet. Corp. et al's No. 1 Fletcher, J. House Sur., 163 ft. N line, 1,852 ft. S line of lease ..... Shale 5,591 ft.; cmtd. csg.

Humble O. & R. Co.'s No. 2 Bloecher, C. Goodrich Sur., center of 17-ac. tract ..... Abd. 7,240 ft.

Humble O. & R. Co.'s No. 2-B Kobs, 466 ft. out SE cor. 200-ac. tract, J. Edwards Sur. ..... Drlg. 3,350 ft.

Humble O. & R. Co.'s No. 1 Kuehn, 1,399 ft. out of the SW cor. W. Usener Sur., 200-ac. tract ..... Drlg. shale 1,222 ft.

Humble O. & R. Co.'s No. 1 Petrick, J. M. Hooper Sur., 600 ft. N line, 466 ft. E line of lease ..... Comp. 20 bbls. per hour; 1/4-in. choke, 5,566 ft.

Humble O. & R. Co.'s No. 1 Shearer, J. N. Hooper Sur., 466 ft. out of NE cor. of 80-ac. tract ..... Rigging.

Magnolia Pet. Co.'s No. 1 Rudel-Oster, J. House Sur., 3,664 ft. S line, 162 ft. W line ..... Drlg. sand 5,620 ft.

Texas Co.'s No. 1 Hirsh, J. House Sur., 466 ft. N, 500 ft. E of SW cor. of 61-ac. tract ..... Cmtd. csg. 5,585 ft.

Texas Co.'s No. 1 Scherer, J. House Sur., 410 ft. E, 466 ft. N of SE cor. ..... Cmtd. csg. 5,584 ft.

FANNETT—JEFFERSON COUNTY

Black Gold Oil Co.'s No. 1 Jackson, Wm. Smith Sur., 3,766 ft. S line, 117 ft. from W line (356) ..... Drlg. sand 5,916 ft.

Gulf Prod. Co.'s No. 14 Thomas, 951 ft. W, 100 ft. N of SE cor. of 446-ac. tract, Wm. Smith Sur. ..... Drlg. shale 1,908 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Co.'s No. 7 Davis (W.O.), Duncan Sur. Drlg. shale 7,394 ft.

Cranfill-Reynolds Co.'s No. 11 Moores Bluff, Duncan Sur., 2,100 ft. from N line, 1,069 ft. from E line of 622-ac. tract ..... Drlg. sandy shale 5,415 ft.

HULL—LIBERTY COUNTY

Eclipse Oil Co.'s No. 1 Ward, (W.O.) Jesse Devore Sur., 50 ft. S, 50 ft. W of NE cor. Empire G. & F. Co.'s 13 acres ..... T.D. 5,540 ft.; fishing.

W. B. Flynn's No. 2 Flynn, J. Devore Sur., 25 ft. S No. 1. T.D. 1,900 ft.; standing.

Hannah Oil Co.'s No. 1 Hannah, J. Devore Sur. (W.O.) .. Rigging.

Hannah Oil Co.'s No. 2 Hannah, J. Devore Sur. ..... Derrick.

Humble O. & R. Co.'s No. 28 Hooks-Guedry, 100 ft. S, 15 ft. E line of lease, J. Devore Sur. ..... Drlg. shale 3,214 ft.

Humble O. & R. Co.'s No. 29 Hooks-Guedry, J. Devore Sur. ..... Drlg. shale 3,413 ft.

Miramar Oil Corp.'s No. 1-B Phoenix, J. Devore Sur., 155 ft. from N line, 700 ft. from W line of lease .... Drlg. shale 5,299 ft.

Miramar Oil Corp.'s No. 5 Phoenix Dev. Co., J. Devore Sur., 50 ft. from NW cor. of 25-ac. lease ..... Drlg. shale 3,010 ft.

Sun Oil Co.'s No. 1 Carr, 50 ft. each way out of NE cor. of 60-ac. tract J. Devore Sur. ..... Drlg. shale 3,830 ft.

Yount Lee Oil Co.'s No. 3 Hooks-Sterling, Jesse Devore Sur., 158 ft. S of N line, 150 ft. W of E line of 5-ac. tract ..... Drlg. sand 3,918 ft.

LIBERTY FIELD—LIBERTY COUNTY

Ross Oil Co.'s No. 1 Richardson, M. G. White Sur., 120 ft. E of Gulf-Humble's No. 1 Carter ..... Derrick.

CONROE—MONTGOMERY COUNTY

Alpha Pet. Co.'s No. 5 South Tex. Dev. Co., 466 ft. N line, 933 ft. E of No. 1, T.&N.O. No. 13 Sur. ..... Drlg. shale 5,013 ft.

Bishop Corp.'s No. 3 Smith & Ratcliff, R. S. Rhodes Sur., 503 ft. N and S lines ..... Drlg. sand 5,126 ft.

Gulf Coast Drlg. & Prod. Co.'s No. 2 J. L. Hensley, A. Steele Sur., 466 ft. S line in center E and W of strip ..... Derrick.

Gulf Coast Drlg. & Prod. Co.'s No. 12 Keystone Mills, A. James Sur., 467 ft. W line, 933 ft. S of No. 11. Derrick.

Gulf Coast Drlg. & Prod. Co.'s No. 13 Keystone Mills, 1,441 ft. N line, 466 ft. E line ..... Comp. 40 bbls. per hour; 1/2-in. choke, 5,122 ft.

Gulf Coast Drlg. & Prod. Co.'s No. 14 Keystone Mills, A. Steele Sur., 2,417 ft. N line, 466 ft. E line, and 975 ft. S of No. 13 ..... Drlg. shale 5,100 ft.

Gulf Oil & Sulphur Co.'s No. 2 Springfield, J. S. Springfield Sur., 466 ft. from SW line, 100-ac. lease ..... Derrick.

Harrison & Abercrombie's No. 1 McShan, T. M. Wiggins Sur., 466 ft. N line, in center E and W of survey (W.O.) ..... Sand 5,134 ft.; cmtd. csg. standing.

Humble O. & R. Co.'s No. 4 Collins, 660 ft. S of No. 1, L. Smith Sur. ..... Drlg. shale 5,134 ft.

Humble O. & R. Co.'s No. 9 Emory ..... Drlg. shale 4,961 ft.

Humble O. & R. Co.'s No. 6 Hirsch, D. McIntyre Sur., 466 ft. N line, 330 ft. E line of survey ..... Comp. 67 bbls. per hour; 1/2-in. choke, 5,146 ft.

Humble O. & R. Co.'s No. 20 Madeley ..... Drlg. shale 5,027 ft.

Humble O. & R. Co.'s No. 27 Madeley, Ransom House Sur. ..... Drlg. shale 1,300 ft.

Humble O. & R. Co.'s No. 21 Moore, 933 ft. SW of No. 9, L. Smith Sur. ..... Drlg. sand 5,120 ft.

Humble O. & R. Co.'s No. 52 South Tex. Dev. Co., T. Slade Sur. ..... Drlg. shale 4,245 ft.

Humble O. & R. Co.'s No. 54 South Tex. Dev. Co., T. Slade Sur., 933 ft. E of No. 26 ..... Drlg. shale 1,788 ft.

Humble O. & R. Co.'s No. 57 South Tex. Dev. Co., T. Slade Sur., 850 ft. N of No. 34 ..... Drlg. shale 2,970 ft.

Humble O. & R. Co.'s No. 58-A South Tex. Dev. Co., T. Slade Sur., 933 ft. E of No. 57 ..... Shale 5,148 ft.

Humble O. & R. Co.'s No. 59 South Tex. Dev. Co., T. Slade Sur. ..... Drlg. shale 2,140 ft.

Humble O. & R. Co.'s No. 3-D South Tex. Dev. Co., T.&N.O. Sur., 1,350 ft. S of No. 2-D ..... Drlg. sand 5,100 ft.

Humble O. & R. Co.'s No. 9 G. A. Wilson ..... Comp. 78 bbls. per hour; 1/2-in. choke, 5,132 ft.

Strake Pet., Inc.'s No. 2 Hammond ..... Derrick.

Strake Pet., Inc.'s No. 2 Krohn, Stephen Bryan Sur. ... Drlg. shale 3,949 ft.

Strake Pet., Inc.'s No. 3 Krohn, 330 ft. S of No. 1, S. H. Bryan Sur. ..... Comp. 100 bbls. per hr.; 1/2-in. choke, 5,124 ft.

Sun Oil Co.'s No. 25 Foster, J. Bricker Sur. ..... Comp. 60 bbls. per hour; 1/2-in. choke, 5,137 ft.

Sun Oil Co.'s No. 24 Foster, 2,240 ft. SW of NE line, 2,040 ft. SE of NW line, J. Bricker Sur. ..... Rigging.

Sun Oil Co.'s No. 30 Foster ..... Drlg. 1,795 ft.

Sun Oil Co.'s No. 32 Foster ..... Derrick.

Sun Oil Co.'s No. 4 Keystone Mills, A. Steele Sur., 1,-068 ft. S of No. 3 ..... Drlg. shale 1,300 ft.

Sun Oil Co.'s No. 7 Keystone Mills, A. Steele Sur., 1,-000 ft. S of No. 6 and 877 ft. W of No. 3 ..... Comp. 545 bbls. a day; 1/2-in. choke, 5,133 ft.

Sun Oil Co.'s No. 10 Keystone Mills, A. Steele Sur. .... Derrick.

Sun Oil Co.'s No. 2 McDonald, 1,275 ft. S of No. 1, Wilson Strickland Sur. ..... Drlg. shale 3,005 ft.

Texas Unity Oil Co.'s No. 2 Keystone Mills, 323 ft. N line, 466 ft. W line, L. Smith Sur. ..... Drlg. shale 5,056 ft.

Texas Unity Oil Co.'s No. 1 Stevens, L. Smith Sur., 1,316 ft. E line, 223 ft. N line of lease ..... Rig.

Tide Water Oil Co.'s No. 1 Amer. Natl. Bank, 390 ft. W line, 400 ft. N line of lease, Wilson Strickland Sur. ..... Drlg. sand 5,071 ft.

Tide Water Oil Co.'s No. 29 Lewis, 933 ft. E of No. 1, C. B. Stewart Sur. ..... Drlg. shale 3,991 ft.
West Prod. Co.'s No. 1 Foster Lbr. Co., 467 ft. N line, 650 ft. W line, Sec. 3, T.&N.O. Sur. ..... Drlg. shale 5,200 ft.

ORANGE—ORANGE COUNTY

Gulf Prod. Co.'s No. 12 Hager-Moore (W.O.) ..... Sand 5,182 ft.

PORT NECHES—ORANGE COUNTY

Texas Co.'s No. 2-B Polk, 695 ft. N, 150 ft. S of NE cor. of N. Jacob Beaumont Sur. ..... Drlg. gumbo 1,696 ft.
Texas Co.'s No. 4 Kuhn, 150 ft. E, 150 ft. N of NW cor. of lease ..... Drlg. shale 3,016 ft.
Texas Co.'s No. 5 Kuhn, 693 ft. from E line, 150 ft. from N line of SE cor. of lease, M. Hall No. 2, T. J. Notgrass Sur. ..... Derrick.

LIVINGSTON—POLK COUNTY

Vick Borsodi et al's No. 1 West, E 2½ acres of 35 acres, Roberts tract, A. Viesca Sur. ..... Wtr. sand; T.D. 4,370 ft.; to P.B.
Gist Oil Co.'s No. 1 Kingsbury County Holding Corp., A. Viesca Sur., 150 ft. N at right angles and 193 ft. E along S line of tract ..... Rigging.
Humble O. & R. Co.'s No. 2 Grandbury, 520 ft. W of E line, 400 ft. N of S line, A. Viesca Sur. ..... Shale 4,310 ft.; cmtd. 7-in. csg. 4,265 ft.; drilled plug.
Humble O. & R. Co.'s No. 3 Grandbury, 6,000 ft. W of No. 1, A. Viesca Sur. ..... Drlg. shale 3,461 ft.
Humble O. & R. Co.'s No. 4 Grandburg, M. C. Swinney Sur., 550 ft. from NE, 289 ft. from SE R/A out of NW cor. of lease ..... Moving in material.
Polk County Dev. Co.'s No. 1 W. R. Crockett, 202 ft. N and S lines, 330 ft. W line of Crockett 12-ac. tract... Cmtd. 10-in. csg. 616 ft.
Shell Pet. Corp.'s No. 3 Davis-Holmes, M. C. Swinney Sur., 577 ft. NE of center of SW line ..... T.D. 4,529 ft.; P.B.
Shell Pet. Corp.'s No. 1 J. Duff, 438 ft. NW, 33 ft. NE lines of lease, A. Viesca Sur. ..... Drlg. shale 1,962 ft.
Shell Pet. Corp.'s No. 1 Jones, 535 ft. from E line, 1,248 ft. from S line of A. Jones lease, A. Viseca Sur. ..... Derrick.
Shell Pet. Corp.'s No. 1 Munson, 305 ft. S line, 779 ft. from E and W lines of Munson 50-ac. tract..... Drlg. shale 3,205 ft.
Skelly Oil Co.'s No. 2 Sanders, 300 ft. S line, 755 ft. E line of lease, A. Viesca Sur. ..... Drlg. shale 3,510 ft.

GRETA—REFUGIO COUNTY

Atlantic-Alamo's No. 3 J. J. O'Brien, 466 ft. N line, 933 ft. W line of lease, M. J. Ximines ..... Comp. 8 bbls. per hr.; ¼-in. choke, 4,398 ft.
Atlantic-Alamo's No. 2-E O'Brien, 933 ft. N of No. 1, 466 ft. E line ..... Comp. 110 bbls.; ¼-in. choke, 4,397 ft.
Atlantic-Alamo's No. 2-F J. M. O'Brien, 466 ft. from S and W lines of lease, M. J. Ximines Sur. ..... Moving in material.
Atlantic Oil Prod. Co.'s No. 5-C O'Brien, 1,193 ft. S of N line, 628 ft. E line ..... Drlg. sand 4,373 ft.
Atlantic Oil Prod. Co.'s No. 1 J. F. E. Heard, 466 ft. E of W line, center N and S lines, 150-ac. tract, J. H. Peoples Sur. ..... Drlg. shale 4,306 ft.
Circle W Oil Co.'s No. 8 J. M. O'Brien, 1,008 ft. N of No. 9, E. H. Winfield Sur. ..... Comp. 45 bbls. per hour; ¼-in. choke, 4,395 ft.
Circle W Oil Co.'s No. 9 O'Brien, 1,007 ft. S of No. 8.. Drlg. shale 1,795 ft.
Circle W Oil Co.'s No. 10 O'Brien, 1,007 ft. N of No. 9.... Rigging.
Dash Prod. Co.'s No. 1-C O'Brien, N. S. Crunk Sur., 466 ft. N line, 466 ft. NW line of tract ..... Setting tubing; T.D. 4,394 ft.
Dash Prod. Co.'s No. 2-E O'Brien, N. S. Crunk Sur., 466 ft. N of SE line, center E and W of tract ..... Derrick.
Floboots Oil Corp.'s No. 1 J. J. O'Brien, 466 ft. S of N line, 466 ft. E line, 50-ac. tract, N. S. Crunk Sur.. Drlg. 4,160 ft.
Floboots Oil Corp.'s No. 2 J. J. O'Brien, 1,055 ft. W of E line, 391 ft. S of N line, M. J. Ximines Sur. ..... Drlg. 4,259 ft.
G. L. Gray Oil Corp.'s No. 1 F. Heard, 466 ft. E of W line, 486 ft. S of N line of NW 40-ac. tract out of Heard's 377-ac. tract ..... Drlg. shale 4,387 ft.
Greta Oil Corp.'s No. 5-B O'Brien, 466 ft. out of SW cor. of tract, E. Winfield Sur. ..... Comp. 300 bbls.; ¼-in. choke, 4,400 ft.
Hewitt & Daugherty's No. 2 M. F. Lambert, 2,530 ft. E of NW cor., Harper Sur., 466 ft. S in Hardwick Sur. ..... Drlg. shale 2,635 ft.
Humble O. & R. Co.'s No. 1 F. Heard, 466 ft. out of NW cor. Ximines Sur. ..... T.D. 3,030 ft.; blowing wild; on fire.
Humble O. & R. Co.'s No. 2 Heard, 466 ft. S of most southerly N line, 303 ft. E of most westerly line, N. S. Crunk Sur. ..... Moving in material.
Edwin M. Jones' No. 3-A J. M. O'Brien, N. S. Crunk Sur., 950 ft. S and W lines of lease ..... Drlg. sand 4,388 ft.
Edwin Jones' No. 4-A O'Brien, 466 ft. N of S line, 466 ft. E of W line of 227-ac. tract, N. S. Crunk Sur. ... Derrick.
Edwin Jones' No. 9-A O'Brien, 466 ft. out NE cor. of lease, N. S. Crunk Sur. ..... Drlg. shale 1,119 ft.
Nesral Oil Co.'s No. 1 Ira Heard, M. J. Ximines Sur., 330 ft. out of NW cor. of 25-ac. tract ..... T.D. 5,962 ft.; P.B. to 1,700 ft.; drlg. new hole 4,024 ft.
Nesral Oil Co.'s No. 1 V. E. Heard, 466 ft. N line, 266 ft. W line, M. J. Ximines Sur. ..... Drlg. shale 4,900 ft.
Nesral Oil Co.'s No. 4 O'Connor ..... Drlg. sandy lime 4,372 ft.
Nesral Oil Co.'s No. 5 O'Connor ..... Comp. 873 bbls.; ¼-in. choke, 4,397 ft.
Southwest Oil Corp.'s No. 3-B J. M. O'Brien, N. Crunk Sur., east offset United's No. 8 Fox ..... Comp. 21 bbls. per hr.; 7/64-in. choke, 4,393 ft.
Southwest Oil Corp.'s No. 4-B O'Brien, N. S. Crunk Sur., 466 ft. N of S, 466 ft. E of W line of lease... Moving in material.
Southwest Oil Corp.'s No. 1 Thos. O'Conner, N. S. Crunk Sur., 466 ft. from N line, 466 ft. from W line of lease ..... Drlg. 900 ft.
Standard of Kansas' No. 1 O'Conner, 466 ft. from N line, center E and W of lease, N. S. Crunk Sur. .. Moving in material.
Stanolind-Atkins' No. 1 Welder, 466 ft. S line, 313 ft. W line of 300-ac. tract, J. T. McGrew Sur. ..... Drlg. sand and lime 1,567 ft.
Texas Gulf Prod. Co.'s No. 3-A J. M. O'Brien, 1,088 ft. W of E line, 466 ft. S at right angles, J. H. Peoples Sur. ..... Derrick.
Texas Gulf Prod. Co.'s No. 1 J. M. O'Brien, J. H. Winfield Sur., 466 ft. NS line, center E and W, Blk. 13 ..... Moving in material.
Trinity Drillers' No. 1 Welder, J. T. McGrew Sur., 466 ft. from S and W lines of J. F. Welder 200-ac. tract.. Derrick.
United Prod. Co.'s No. 7 W. T. Fox, 695 ft. SE of No. 6, Hews & Brown Sur. ..... Comp. 140 bbls. a day, 4,395 ft.
United Prod. Co.'s No. 10 Fox, 894 ft. NE of No. 9, Hews & Brown Sur. ..... Drlg. gumbo 2,560 ft.
United Prod. Co.'s No. 11 Fox, 867 ft. NE of No. 10, Hews & Brown Sur. ..... Drlg. gumbo 3,340 ft.
United Prod. Co.'s No. 5 Lambert, 700 ft. W, 600 ft S from NE cor. of lease, E. W. Harper Sur. ..... Drlg. shale 2,371 ft.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 9 Clay, 600 ft. NE of No. 1 Clay, J. F. Perry Sur., 757-ac. tract ..... Drlg. anhydrite 3,040 ft.

SOUTH LOUISIANA FIELDS

ACADIA PARISH

Superior Oil Co.'s No. 1 P. O. Hermandes, 990 ft. W, 990 ft. S of NE cor. SE Sec. 34-8s-3e ..... Moving in material.
I. M. Pharris' No. 1 Link Bros., 150 ft. S, 150 ft. E. NW cor. Sec. 36-7s-1e ..... Rigging.

ASSUMPTION PARISH

Barnsdall Oil Co.'s No. 1 Williams, 330 ft. out of NE cor. Sec. 38-14s-14e ..... T.D. 8,155 ft.; standing.

DARROW—ASCENSION PARISH

Gulf Ref. Co.'s No. 1 Darrow Community, 600 ft. due N, 100 ft. due W of Rio Bravo's No. 1 Community .... Drlg. shale 4,185 ft.

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 17 Watkins, 660 ft. E of No. 15, in Sec. 18-12s-12w ..... Derrick.

CAMERON MEADOWS—CAMERON PARISH

Humble O. & R. Co.'s No. 4 Cameron Meadows, 360 ft. N, 600 ft. W, SE cor. Sec. 21-14s-13w ..... Drlg. shale 3,622 ft.
Humble O. & R. Co.'s No. 5 Cameron Meadows, 2,260 ft. W, 23 ft. S of NE cor. Sec. 21-14s-14w ..... Driving piling.
Burton-Sutton Oil Co.'s No. 2 School Land, 1,866 ft. W, 150 ft. N of SE cor. Sec. 16-14s-13w ..... Driving piling.

CAMERON PARISH

Southern Sulphur Co.'s No. 1 Gulf of Mexico, 330 ft. S, 338 ft. E of SW cor. Sec. 29-15s-10w ..... T.D. 3,275 ft.; standing.
Texas Co.'s No. 9 State, Calcasieu Lake, 16,055 ft. W, 3,270 ft. N, NE cor. Sec. 1-14s-9w ..... Derrick.

CALCASIEU PARISH

Gulf Ref. Co.'s No. 1 Sweet Lake Oil Co., 660 ft. N, 330 ft. E of SW cor. Sec. 29-10s-5w ..... Drlg. sand 4,196 ft.
Fred Oil Co.'s No. 1 Farast, 566 ft. N, 300 ft. W, SE cor. NW SE Sec. 26-8s-10w ..... Drlg. shale 373 ft.
Union Sulphur Co.'s No. 1 Barbe, 2,681 ft. W, 2,647 ft. S of NE cor. Sec. 1-9s-8w ..... Drlg. lime 3,119 ft.

CHOCTAW—IBERVILLE PARISH

Standard Oil Co. of La.'s No. 5 Myrtle Grove, 1,700 ft. N, 200 ft. W, SE SW cor. SW Sec. 52-9s-11e ..... Drlg. shale 2,760 ft.

EAST BATON ROUGE PARISH

British-American Oil Co.'s No. 1 Louisiana, 2,750 ft. NE NW cor. Sec. 79, and 1,700 ft. N of NE Sec. 79, in Sec. 4-8s-1e ..... Drlg. shale 5,506 ft.

EDGERLY—CALCASIEU PARISH

S. A. Emerson's No. 13 Hunter, 465 ft. N, 90 ft. E, SW cor. Sec. 21-9s-11w (W.O.) ..... Standing 4,118 ft.
Union Sulphur Co.'s No. 1 Hunter, 210 ft. E, 1,260 ft. N of SW cor. SE Sec. 21-9s-11w ..... Drlg. shale 2,640 ft.
Yount Lee Oil Co.'s No. 1 Sulphur Mining Co., 150 ft. S, 300 ft. W, NE cor. Sec. 33-9s-11w ..... Drlg. shale 700 ft.

EVANGELINE PARISH

J. E. Ledau's No. 3 Vidrine, 30 ft. S of No. 2, Sec. 47-3s-2e ..... Rigging.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 1 Grady Lee-Humble, 2,031 ft. E, 225 ft. N of NW cor. Sec. 34, in Sec. 27-11s-1w.... Drlg. lime 4,557 ft.
Pure Oil Co.'s No. 5 Mulvey, 500 ft. from No. 3 Mulvey, in line with Nos. 1 and 2 ..... Drlg. shale 2,628 ft.

HACKBERRY—CAMERON PARISH

Wilford Lahay et al's No. 1 Roux (W.O.) ..... T.D. 2,652 ft.; drlg. new hole 2,215 ft.
Gulf Ref. Co.'s No. 12 Irwin, 865 ft. N, 518 ft. E of SW cor. Sec. 44-12s-9w ..... Drlg. sand 7,490 ft.
J. G. Sutton's No. 1 Little, 2,221 ft. W, 1,670 ft. N, SE cor. Sec. 22-12s-10w (W.O.) ..... Drlg. sand 3,098 ft.
Texas Co.'s No. 11-B State ..... Derrick.
Union Sulphur Co.'s No. 1 Barber est., 1,720 ft. N line, 320 ft. E of SW cor. Sec. 12-12s-10w ..... Drlg. shale 5,772 ft.
Union Sulphur Co.'s No. 8 Humble ..... Drlg. shale 5,096 ft.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Barnsdall Oil Co.'s No. 1 Heyd, 330 ft. SW cor. of E½ SW Sec. 7-9s-4w ..... Sand 6,926-46 ft.; comp. 1,095 bbls.; ½-in. choke.
Magnolia Pet. Co.'s No. 1 Le Blew, 670 ft. W, 330 ft. S of NE cor. SE Sec. 14-9s-7w ..... Rigging.
Magnolia Pet. Co.'s No. 5 Waite, 660 ft. E, 300 ft. N, SW cor. SE Sec. 12-9s-7w ..... Derrick.
Shell Pet. Corp.'s No. 1 Tuten, 265 ft. S, 330 ft. W of NE cor. SW Sec. 13-9s-7w ..... Drlg. shale 5,701 ft.
Shell Pet. Corp.'s No. 1 Johnson, 265 ft. S, 330 ft. E of NW cor. SW Sec. 18-9s-6w ..... Spudding.
Shell Pet. Corp.'s No. 1 C. Le Blew, 660 ft. W, 330 ft. N of SE cor. of lease ..... Rigging.

JEFFERSON DAVIS PARISH

Humble O. & R. Co.'s No. 2 Devilbiss, 1,850 ft. S, 250 ft. W of NE cor. Sec. 14-8s-4w ..... Drlg. shale 3,170 ft.
Shell Pet. Corp.'s No. 1 Kratzs, 660 ft. S, 330 ft. W of NE cor, NW Sec. 12-9s-4w ..... Moving in material.

JENNINGS—ACADIA PARISH

Yount Lee Oil Co.'s No. 13 Houssiere-Latreille, Sec. 47-9s-2w, 300 ft. E of No. 12 ..... Drlg. shale 5,932 ft.

LAFOURCHE PARISH

Barnsdall Oil Co.'s No. 1 Harang, Lot 6, in Twp. 17s-20e. Cmtd. 9-in. csg. 6,400 ft.; S.O. 6,425-49 ft.; tested S.W.; recmtd.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 9 Lake Barre-L.L.&E., 4,013 ft. S, 305 ft. E of NW cor. Sec. 30-21s-20e in Sec. 36-21s-19e ..... Comp. 1,950 bbls.; ½-in. choke, 3,777 ft.
Texas Co.'s No. 22 State-Lake Barre, 150 ft. northerly from No. 18 ..... T.D. 4,888 ft.; fishing.
Texas Co.'s No. 23 State-Lake Barre ..... Sand 944 ft.; fishing.
Texas Co.'s No. 25 State-Lake Barre ..... Bldg. derrick.
Texas Co.'s No. 26 State-Lake Barre, 150 ft. northerly from No. 22 ..... Derrick.

LAKE WASHINGTON—PLAQUEMINES PARISH

Humble O. & R. Co.'s No. 11 Cockrell & Moran ..... Gumbo 400 ft.; standing.
Humble O. & R. Co.'s No. 12 Cockrell & Moran ..... Standing 1,169 ft.
Humble O. & R. Co.'s No. 3 La. State, Twp. 20s-26e, 2,920 ft. N, 19 ft. E of station ..... No report.

LEESVILLE—LA FOURCHE PARISH

Gulf Ref. Co.'s No. 2 City of New Orleans, 260 ft. E, SE cor. Lot 4, Sec. 26-21s-22e ..... Drlg. gumbo 1,070 ft.
Gulf Ref. Co.'s No. 1 Community, Blk. C, 151 ft. N of S line, 100 ft. E of E bank of Bayou La Fourche, Sec. 23-21s-22e ..... Rigging.
Gulf Ref. Co.'s No. 1 Community, Blk. E, 151 ft. N of S line, 150 ft. E of E bank of Bayou La Fourche, Sec. 23-21s-22e ..... Derrick.
Gulf Ref. Co.'s No. 1 Le Fort, 100 ft. N of S line, 100 ft. W of N bank of Bayou La Fourche, Sec. 23-21s-22e ..... Spudding.
Texas Co.'s No. 9 L.L.&E., 2,921 ft. S, 900 ft. W from NE cor. Sec. 27-21s-22e ..... Drlg. shale 2,120 ft.

LOCKPORT—CALCASIEU PARISH

Magnolia Pet. Co.'s No. 7 Farquarher, 330 ft. S, 174 ft. W of NE cor. SW NE Sec. 8-10s-9w..... Moving in material.
Magnolia's No. 9 Farquaher, 200 ft. N, 150 ft. E of SW cor. NE SE Sec. 8-10s-9w (O.W.D.D.) ..... Drlg. shale 6,549 ft.
Magnolia Pet. Co.'s No. 11 Bordages, 660 ft. N, 490 ft. W of SE cor. NE NE Sec. 8-10s-9w ..... Derrick.
Magnolia Pet. Co.'s No. 4-A Watkins fee, 685 ft. E, 200 ft. N of SW cor. NW NE Sec. 9-10s-9w ..... Drlg. sand 4,529 ft.
Union Sulphur Co.'s No. 1 Farquaher, 200 ft. S and W lines, in the NE cor. SW SE Sec. 36-12s-10w, in 2-ac. tract ..... Drlg. gumbo 1,365 ft.
Union Sulphur Co.'s No. 1 Moss (W.O.) ..... Drlg. shale 6,244 ft.

NEW IBERIA—IBERIA PARISH

G. D. Spell, 3,138 ft. SW cor. along W boundary line, then in a NE direction 1,140 ft. along N line of Bernard property in Sec. 54-12s-7e ..... Drlg. sand 2,460 ft.

PLAQUEMINES PARISH

Southern Sulphur Co.'s No. 1 Bay Adams ..... Rig.

PORT BARRE—ST. LANDRY PARISH

Cale O. & G. Co.'s No. 1 Thompson ..... Drlg. sand showing oil 3,412 ft.
Campbell et al's No. 1 J. E. Jeonsonne, Sec. 7-6s-5e, 30 ft. N of S line in center E and W of 30-ac. tract.. Sand 2,890 ft.; tested S.W.: standing.
Gulf Ref. Co.'s No. 5 Wilson-Cockran, 600 ft. N, 910 ft. E of No. 2, Sec. 4-6s-5e ..... Derrick.
Texas Co.'s No. 17 Botney Bay, 1,800 ft. S 8 deg. W, 600 ft. N 82 deg. most southern NE 560 deg. tract, Sec. 4-6s-5e ..... Derrick.
Texas Co.'s No. 18 Botney Bay ..... Sand 3,419 ft.; tested S.W.; sealing off bottom.
Texas Co.'s No. 19 Bouney Bay ..... Derrick.

BORRENTO—ASCENSION PARISH

Union Sulphur Co.'s No. 2 Lacy White Fraink, 1,175 ft. N, 1,615 ft. W of SE cor. Sec. 16-10s-4e.....Drlg. shale 3,171 ft.
Union Sulphur Co.'s No. 25 United Land .....Drlg. shale 1,157 ft.

STARKS—CALCASIEU PARISH

Gulf Ref. Co.'s No. 33 Lutcher-Moore .....Drlg. sand 3,020 ft.
Union Sulphur Co.'s No. 3 Industrial Lbr. Co., 2,400 ft. N, 412 ft. W, SE cor. Sec. 19-9s-12w .....Salt 4,426 ft.; P.B. to 2,400 ft.; drlg. new hole 2,880 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 778 fee, 1,153 ft. N, 795 ft. E of center of Sec. 29-9s-10 .....Sand 3,805 ft.; showing oil; to pump.
Union Sulphur Co.'s No. 781 fee, 1,768 ft. W, 726 ft. N of C Sec. 29-9s-10w .....Comp. 300 bbls.; T.D. 3,083 ft.
Union Sulphur Co.'s No. 786 fee .....Drlg. shale 4,521 ft.
Union Sulphur Co.'s No. 787 fee, 119 ft. from N line, 1,632 ft. from W line of C Sec. 29-9s-10w.....Drlg. shale 597 ft.

ST. BERNARD PARISH

Southern Sulphur Co.'s No. 1 Lake Lery, 400 ft. W, 500 ft. N, SW cor. Sec. 28-13s-15e .....Cmtd. csg. 212 ft.
Southern Sulphur Co.'s No. 1 State Lake Bargne, 850 ft. N, 230 ft. E, SE cor. Sec. 33-13s-15e .....Cmtd. csg. 650 ft.

ST. LANDRY PARISH

Gaunch Synd.'s No. 1 Lewis, 300 ft. N and E of SW cor. NW NE Sec. 29-5s-6e .....Drlg. shale 3,285 ft.
H. H. Hotchins Lbr. Co.'s No. 1 Whiteman Lbr. Co., 250 ft. out of SW cor. NE Sec. 15-5s-6e .....Cmtd. csg. 710 ft.

ST. MARTIN PARISH

Standard Oil Co. of Kansas' No. 1 E. B. Hopkins, Sec. 33-10s-4e .....T.D. 6,010 ft.; reaming to set 7-in. csg.

TERREBONNE PARISH

Texas Co.'s No. 9 State-Dog Lake .....Drlg. shale 4,037 ft.
Texas Co.'s No. 9 State-Caillou Island .....Drlg. sand 4,037 ft.
Texas Co.'s No. 2 School Board-Bay St. Elaine .....Drlg. 3,235 ft.
Texas Co.'s No. 2 State-Four Isle .....Bldg. derrick.
Texas Co.'s No. 1 State Bay-St. Elaine, 3,900 ft. N, 3,300 ft. E of SW cor. Sec. 5-22s-18e .....Moving in.
Texas Co.'s No. 10 State-Lake Pelto, 420 ft. N, 1,246 ft. E, SW cor. Sec. 4-23s-18e .....Rigging.

VERNON PARISH

E. Dawson's No. 1 Delta Land & Timber Co., C SW SW Sec. 3-1n-11e .....Abd. 3,214 ft.
Glen J. Smith's No. 1 Fullerton Mineral Co., 330 ft. N and E, SW cor. Sec. 32-1n-5w .....Drlg. shale 3,128 ft.

VINTON—CALCASIEU PARISH

Marrs McLean's No. 16 Gray, 426 ft. N, 658 ft. E of SW cor. Sec. 33-10s-12w .....Rigging.
Starks & Broker's No. 11 A. J. Vincent, NW cor. SE Sec. 33-10s-12w .....Moving in material.
Wilson Broach's No. 4 Wilson .....Standing 3,806 ft.
Wilson Broach's No. 10 Wilson Strip, 650 ft. N, 370 ft. E, SW cor. SE NE Sec. 33-10s-12w .....Derrick.
Wilson-Broach Co.'s No. 11 Wilson Strip, 450 ft. N, 643 ft. E of SW cor. SE NE Sec. 33-10s-12w.....Drlg. sand 3,809 ft.
Gulf Ref. Co.'s No. 7 J. W. Gardner, 303 ft. E, 550 ft. N, SW cor. SE NE Sec. 33-10s-12w .....T.D. 4,370 ft.; P.B. to 3,560 ft.; drlg. new hole 3,785 ft. in wtr. sand.
Vinton Pet. Co.'s No. 7 Rescue (W.O.), 400 ft. W, 600 ft. S of NE cor. Sec. 4-11s-12w .....Pulling screen to deepen 2,970 ft.
Vinton Pet. Co.'s No. 1 Vincent .....Drlg. sand 2,930 ft.
Vinton Pet. Co.'s No. 22 Vincent, 685 ft. N, 620 ft. E of SW cor. Sec. 34-10s-12w .....Standing 2,774 ft.

TEXAS

MISCELLANEOUS WILDCATS

AUSTIN COUNTY

Tibbetts et al's No. 1 Heiceman, 4,320 ft. W along N line from NE cor. of A. Larson Sur. in J. Cooper Sur., thence 416 ft. N at R/A .....Drlg. shale 235 ft.
R. R. Mitchell's No. 1 H. Schierda, J. P. Fitzgibbons Sur., 300 ft. out NE cor. 96-ac. tract .....Moving in material.

BRAZORIA COUNTY

Barnsdall Oil Co. and Superior Oil Co. of Calif.'s No. 1 McCain, W. C. D. Hall Sur., 1,116 ft. N, 330 ft. E of SW cor. of Lot 65 .....Drlg. shale 2,300 ft.
Danciger O. & R. Co.'s No. 1 L. Williams, 700 ft. NE line, 726 ft. SE line of 180-ac. tract, W. C. Carson Sur. .....Drlg. 2,595 ft.

BRAZOS COUNTY

H. Elliott et al's No. 1 W. F. Odom, near center of 379-ac. tract in SW cor. of Isack Curll Sur. .....Cmtd. surface csg.
Liner et al's No. 1 Peters, 300 ft. SE line, 300 ft. SW line of E. V. Peter fee, G. Powell Sur. .....Rig.
F. H. Scott's No. 1 Klintworth, I. Curd Sur., 300 ft. from N line, 400 ft. from E line .....T.D. 1,487 ft.; gas sand 1,393-1,420 ft.; cmtd. 8¼-in. csg. 1,385 ft.

CHAMBERS COUNTY

W. H. Christian's No. 1 D. I. Buchanan, J. Milhome Sur., 1,300 ft. W of E line, 50 ft. N of S line of Strip No. 17 .....T.D. 50 ft.; standing.
Smith & Lavender's No. 1 McCormick, F. Ludlow Sur., 150 ft. NE cor. .....Derrick.

COLORADO COUNTY

Columbus Dev. Co.'s No. 1 Miller, H.T.&B. No. 3, 2,268 ft. E of W line, 1,345 ft. S of N line of survey..Drlg. shale 5,216 ft.

FAYETTE COUNTY

Colorado Oil Corp., J. Winn Sur., 650 ft. NE of center of SW line of 62.8-ac. tract .....T.D. 2,139 ft.; standing.
Columbus Drlg. Co. and Gulf Prod. Co.'s No. 1 Turner, 400 ft. E of river, 300 ft. N of S line, J. Petty Sur..Drlg. shale 4,517 ft.
Hughes-Patrick Oil Co.'s No. 1 Lake Side Irrigation, 1,500 ft. SE, 500 ft. NE NW cor. of Patrick Reel Sur..Drlg. sand showing oil 3,680 ft.
Plymouth Oil Co.'s No. 2 Ream, 1,000 ft. SW of No. 1, I.&G.N. Sur. .....Drlg. 160 ft.
Weimar Dev. Co.'s No. 1 Janecka, H. Austin Sur. .....Moving in material.

FORT BEND COUNTY

A. N. Phillips et al's No. 1 Grigar, 2,150 varas E line, 1,550 varas N line, J. S. O'Connor Sur. .....T.D. 700 ft.; standing.
Quintana Oil Co. and Great So. Life's No. 1 Great So. Life, EC Robertson Sur., 500 ft. S of N line, 500 ft. W of Brazos River .....Drlg. shale 6,710 ft.

GRIMES COUNTY

Clark & Dodd's No. 1 Murry, 150 ft. W line, 300 ft. S line, Anderson Sur. .....Spudded; standing.
Cambrian Oil Co.'s No. 1 W. V. Sangster, John Moore Sur., 300 ft. out of most westerly NW cor. of 218-ac. tract .....Derrick.
Foster et al's No. 1 Quinn, 7,100 ft. from W line, 3,900 ft. from N line of S. F. Austin Sur. .....Standing 65 ft.
Humble O. & R. Co.'s No. 1 Henderson, 760 ft. S, 700 ft. W at R/A of NE cor. of lease, G. W. Seaton Sur. .....Rigging.
H. C. Ratcliff's No. 1 Fulgham, A. Tuttle Sur., 600 ft. N line, 540 ft. W line of lease .....Derrick.

HARRIS COUNTY

J. A. Hodges' No. 1 Scott, 200 ft. S, 900 ft. W of intersection of Crosby Huffman, F. Rankin Sur. .....Drlg. shale 1,300 ft.
G. T. Lewis, tr.'s No. 1 Gore, S. McKissick Sur., 518 ft. SW along SE line of 100-ac. tract from W cor. of S. V. Allen's 105-ac. tract and 500 ft. NW at right angles in 100-ac. tract (W.O.) .....Drlg. shale 5,650 ft.
Russell et al's No. 1 Burt & Griffith, S. Keely Sur., 200 ft. N line, 200 ft. E of highway .....T.D. 2,156 ft.; standing.
Jack Schultz et al's No. 1 Synd. Land Co., 2,200 ft. N of S line, 200 ft. W from SE cor. Pruitt Sur. ...Drlg. sand 4,141 ft.
E. E. Young et al's No. 1 Paddock, J. Cunningham Sur., 300 ft. W of E line of Blk. 41 on line dividing Blks. 46 and 47 .....Standing 1,800 ft.

HOUSTON COUNTY

Thompson et al's No. 1 E. W. Harrison, 330 ft. out E cor. 130-ac. tract, J. Masters, Sr., Sur. .....Drlg. shale 4,896 ft.

JACKSON COUNTY

Ed Parsons et al's No. 1 Clark, 300 ft. out SW cor. of R. J. and M. Clark lease, A. S. White Sur. .....Drlg. shale 2,795 ft.

JEFFERSON COUNTY

Lucky Strike Oil Co.'s No. 1 Walker, D. Easley Sur., 2,100 ft. N, 1,400 ft. E of NW cor. of Lot No. 13...Derrick.
Sun Oil Co.'s No. 1 Paggi, 990 ft. W, 1,610 ft. N of SE cor. of T.&N.O. Sur. No. 33 .....Drlg. shale 6,973 ft.
Texas Co.'s No. 1 J. R. Bevil, 150 ft. each way out of NE cor. of lease, Brown & Caswell Sur. .....Drlg. shale 4,911 ft.

LEON COUNTY

Shell Pet. Corp.'s No. 1 A. Begga, 406 ft. N, 1,128 ft. E of inside line of lease, John Carter Sur. .....Drlg. shale 5,867 ft.

LIBERTY COUNTY

W. W. Algren, tr.'s No. 1 Nona Mills Lbr. Co., J. E. Mayfield Sur., 400 ft. from W and 200 ft. from N line of lease .....Drlg. shale 5,840 ft.
Gulf Prod. Co.'s No. 1 Kirby Lbr. Co., 900 varas S of N line, 1,400 varas E of W line, J. Pleasant Sur. ..Rigging.
Layton et al's No. 1 J. A. Lovett, 200 ft. W of E line, 600 ft. N of S line of lease, P. P. Devers Sur. ....Drlg. shale 300 ft.
E. V. Parsons et al's No. 1 Foster Lbr. Co., Ann Holhausen Sur., 750 varas S line, 3,700 varas W of E line .....Derrick.
Thomas et al's No. 1 A. Ercke, 600 ft. E of W line, 2,350 ft. N of S line, A. H. Ercke Sur. in Reason & Green Sur. .....Drlg. lime 4,400 ft.

MATAGORDA COUNTY

Continental Oil Co.'s No. 1 Boker, 400 ft. out of SW cor. Lot 17, Robbins & Middle Subd., J. W. Criswell Sur. .....T.D. 6,504 ft.; drlg. sidetracked hole at 6,420 ft.
Oils Consolidated, Inc.'s No. 1 Hawkins, Daniel McCarthy Sur., 1,240 ft. NE, 350 ft. NW of S cor. ....Standing 3,330 ft.
United North & South Dev. Co.'s No. 1 Unit 6 (No. 2 Stoddard), 25 ft. each way out of NW cor. of Lot 19, Buckeye Townsite .....T.D. 7,872 ft.; P.B. to 5,500 ft.
United North & South Dev. Co.'s No. 1 Unit 25, 1,335 ft. S, 1,000 ft. E of No. 1 Unit 6 .....To test O.S. 6,169-79 ft.

MONTGOMERY COUNTY

Baker et al's No. 1 Benker, D. James Sur. .....Drlg. sand 3,718-42 ft.
Derring & Frazier's No. 1 Rolph, H. Blood Sur., 660 ft. S from center of survey .....Moving in material.
Gohlson Bros.' No. 1 Cavel, Mary Guber Sur. .....Dry and abd. 4,201 ft.
Sutton & Hawkins' No. 2 Foster Est., 90 ft. E of No. 1, A. M. Del Garza Sur. .....Drlg. shale 300 ft.
Turnball & Erwin's No. 1 B. C. Ayler, E. Votaw Sur., 600 ft. out of N cor. of B. C. Ayler 1,938-ac. tract...Spudding.

ORANGE COUNTY

Blue Line Oil Co.'s No. 1 Godwin, Richard Ballew Sur., 300 ft. from E line, 150 ft. from NE cor. of Godwin 20-ac. tract .....Rigging.
Texas Louisiana Oil Co.'s No. 1 Starks, 2,450 ft. N of NW cor. M. Delano Sur. 68, 10,500 ft. E at right angles .....T.D. 1,197 ft.; standing.

POLK COUNTY

D. B. McCall's No. 1 Faulkner, 350 ft. W of center of E line of 200-ac. tract, G. B. Dikes Sur .....Drlg. shale 800 ft.
Dick Schwab's No. 1 Kirby & West, Geraldus Thomas Sur., 1,000 ft. N of N line of P. A. Sublett Sur., and 3,000 ft. W of E line of Thomas Sur. .....T.D. 4,898 ft.; abd.
Dick Schwab's No. 2 Kirby, G. S. Thomas Sur., 330 ft. out of SW cor. of 250-ac. tract, of 500-ac. tract....Moving in material.

REFUGIO COUNTY

C. B. Bunte et al's No. 1 F. B. Rooke, J. M. Aldritte Sur., CWL of Sec. 4 .....Drlg. 1,500 ft.
Humble O. & R. Co.'s No. 10 O'Connor, Powers & Hewitson Sur., 15,133 ft. N of S line, 7,302 ft. W of E line, of J. Keating Sur. .....T.D. 2,503 ft.; fishing.
Texas Co.'s No. 1 Rooke, J. M. Aldritte Sur., 7,500 ft. S 53 deg. W, 850 ft. 37 deg. W of N cor. Sur. .... Drlg. sandy shale 5,625 ft.
Wellington Oil Co.'s No. 1 Roach, R. J. Downey Sur., 1,250 ft. NW line, 515 ft. NE line of Tract No. 1....Drlg. shale 5,837 ft.

SAN JACINTO COUNTY

Piedmont Oil Co.'s No. 2 Foster Lbr. Co., 330 ft. each way out of NE cor., Geo. Taylor Sur. .....Moving in material.
Turnbull & Irwin's No. 1 J. J. West, J. Rankin Sur., center 25-ac. tract .....Drlg. shale 450 ft.

TRINITY COUNTY

T. M. Smith et al's No. 1 C. Moody, E. Roberts Sur., 552 ft. W of E line, 1,202 ft. N of S line, of 40-ac. tract .....Drlg. shale 950 ft.

TYLER COUNTY

Marshall & Denton's No. 1 Seman, G. W. Banlick Sur., Abstract No. 654, SW cor. of 320-ac. tract .....Drlg. rock 924 ft.

VICTORIA COUNTY

J. F. Camp's No. 1 Maurer, 330 ft. NE cor. Maurer's 178 acres, R. Manchola Sur. .....Drlg. shale 4,012 ft.
Stoneleigh O. & G. Co.'s No. 1 Dietzel, 330 ft. out of NW cor. of Dietzel's 95-ac. tract, R. Manchola Sur. Drlg. shale 3,035 ft.
Stoneleigh O. & G. Co.'s No. 2 E. B. Terrell, 330 ft. out of SE cor. of Terrell's 215-ac. tract, R. Manchola Sur. .....Moving in derrick.
Stoneleigh O. & G. Co.'s No. 1 Trybble, 330 ft. out of SE cor. Trybble's 122-ac. tract, R. Manchola Sur. ..Moving in derrick.
Stoneleigh O. & G. Co.'s No. 1 Zimmer, R. Manchola Sur., 1,007 ft. SW line, 645 ft. SE line .....Blowing wild; T.D. 4,846 ft.
The Texas Co.'s No. 6-A McFaddin, 5,600 ft. from NE line, 250 ft. from SE line of A. J. Gray .....Gas sand 3,039-49 ft.; pumping wtr. and mud into sand to kill pressure.
The Texas Co.'s No. 7 McFaddin, 6,600 ft. S 15 deg. W, 450 ft. N 75 deg. W at right angles from the NE cor. of the A. J. Gray Sur. .....T.D. 1,176 ft; blowing gas and mud.
Texas Co.'s No. 7-A McFaddin, 250 ft. due N of No. 7, A. J. Gray Sur. .....Drlg. shale 1,268 ft.
Texas Co.'s No. 8 McFaddin, A. J. Gray Sur., 6,600 ft. N of S line, 1,383 ft. from E line of NE cor. .....Rigging.

WALKER COUNTY

McDowell et al's No. 1 Thompson, Jackson Crouch Sur., 330 ft. E of W line, 1,200 ft. S of N line ...Rigging.

WALLER COUNTY

Hobson & Moore's No 1 Peters, Justo Liendo Sur., 590 ft. W of creek and 1,144 ft. N of S cor. .....Standing 5,265 ft.

WHARTON COUNTY

Monarch Oil Co.'s No. 1 Schasteck, 150 ft. each way out of SW cor. G. W. Reynolds Sur. .....Drlg. shale 495 ft.
Nabers et al's No 1 Lurker, 210 ft. out of SE cor. of N½ SW Sec. 58, E.T.R.R. Sur. .....Standing 5,026 ft.
Pure Oil Co.'s No. 1 W. Garrett, Sec. 28, 4,456 ft. SE, 1,690 ft. NE of W cor. .....T.D. 6,343 ft.; standing.
Pure Oil Co.'s No. 1 A. J. Wilder, T. W. Hurd Sur., 509, 2,575 ft. SE, 1,690 ft. NE from W cor. of Sec. 28. Drlg. shale 7,326 ft.
Pure Oil Co.'s No. 1 Stewart, 2,419 ft. NW, 1,650 ft. NE of S cor. of Sec. 25, Morris & Cummings Sur. ....Cmtd. csg. 5,954 ft.
Pure Oil Co.'s No. 1 Chas. T. Kuntze, 2,183 ft. from NW line, 467 ft. from SW line, Sec. 27, Morris & Cummings Sur. .....Cmtd. csg. 7,118 ft.
Pure Oil Co.'s No. 1 W. H. Lancaster, Morris & Cummings Sur., Sec. 23, 1,650 ft. NW, 1,600 ft. SW of E cor. of section .....Drlg. shale 6,539 ft.
Pure Oil Co.'s No. 1 Willis McIntyre, 1,650 ft. S of N line, 1,759 ft. S of E line of section .....Cmtd. csg. 6,180 ft.
Pure Oil Co.'s No. 1 Wallace Houston, 853 ft. SE of NW line and 1,650 ft. NE of SW line, Sec. 28, (T. W. Heard Sur.) .....Blowing wild; on fire; 6,451 ft.
Pure Oil Co.'s No. 1 Isaac Weaver, J. M. Brownson Sur., Sec. 22, 1,650 ft. out of N cor. of section ....T.D. 6,181 ft.; standing.

Smith, McDannald and Pure Oil Co.'s No. 1 B. M. Yeamans, 330 ft. out of N cor. of B. M. Yeamans Sur., Abst. 913 ..... Tested S.W. at 6,196 ft; standing

Wildcat Operations in Louisiana-Arkansas

(Continued from Page 46)

Helena O. & G. Co.'s No. 1 C. E. Pugh, 330 ft. N and E, SW cor. NE Sec. 19-2-13 ..... Set 6-in. 1,530 ft.
Helena O. & G. Co.'s No. 1 J. W. Tatum, 330 ft. N and W, SE cor. NE SE Sec. 9-2-13 ..... Swabbing 1,512 ft.
Helena O. & G. Co.'s No. 1 E. K. Harris, 990 ft. S and W, C Sec. 10-2-13 ..... Testing 1,955 ft.
Mamie S. Hammond's No. 1 Patrick, 330 ft. N, 2,310 ft. W, SE cor. Sec. 1-2-13 ..... T.A. 3,235 ft.
R. P. Holland et al's No. 1 A. J. Burkett, 990 ft. N, 330 ft. W of C, Sec. 10-2-13 ..... Drlg. 340 ft.
Lula M. Layton's No. 1 Henderson, 330 ft. N, 990 ft. E, C, Sec. 29-2-13 ..... Set 10-in. 75 ft.; drlg. 400 ft.
H. C. Lessinger's No. 1 Bowman-Hicks Lbr. Co., 338 ft. S and E, NW cor. SW Sec. 13-2-13 ..... Set 7-in. 3,250 ft.
Joe Modisette's No. 4 Frost Lumber Co., 990 ft. W, 330 ft. from C Sec. 21-2-13 ..... Testing 1,980 ft.
John W. Moffett's No. 1 Logan Oil Co., Sec. 3-2-13 .... Drlg. 1,150 ft.
L. L. Posey's No. 1 A. J. Burkett, 330 ft. N and W, SE cor. S½ NE NW Sec. 10-2-13 ..... Set 10-in. 82 ft.; drlg. 1,432 ft.
J. E. Sedbury's No. 1 E. K. Harris, 990 ft. W, 330 ft. S, C Sec. 10-2-13 ..... Drlg. 6-in. plug 1,770 ft.
Tex.-La.-Ark. Oil Co.'s No. 1 Bowman-Hicks, 295 ft. N, 440 ft. E, SW cor. SW NW Sec. 23-2-13 ..... Set 6-in. 1,609 ft.
Homer Tyson's No. 1 G. W. Hough, 330 ft. S and E, NW cor. SW NW Sec. 31-2-13 ..... S.D. 40 ft.
Windsor Oil Co.'s No. 2 Barr, 330 ft. N and E, SW cor. NW Sec. 15-2-13 ..... Location.

SABINE—ZWOLLE

H. C. Maulding's No. 1 Alford, 330 ft. S and W, NE cor. NW NW Sec. 18-7-10 ..... Set 10-in. 40 ft.
H. C. Maulding's No. 1 Van Vickhaven, 330 ft. N and W, SE cor. NE Sec. 3-7-11 ..... Set 10-in. 40 ft.

WEBSTER PARISH

J. P. Evans' No. 1 Burson, 350 ft. N and E SW cor. NW SE Sec. 27-18-9 ..... Drlg. 3,252 ft.

Arkansas

COLUMBIA COUNTY

C. W. Alworth et al's No. 1 W. D. King, SW cor. SE SW Sec. 16-17-20 ..... Drlg. 2,135 ft.
O. F. Whittaker's No. 1 Garner, C SW NE Sec. 11-15-20 .. Drlg. 1,480 ft.

JEFFERSON COUNTY

J. E. Elliott's No. 1 B. V. Nevin, 440 ft. N and E, SW cor. SW NW Sec. 36-4-10 ..... Rigging up.

HEMPSTEAD COUNTY

A. H. Bagnelle's No. 1 Trattner & Rhinehart, Sec. 2-13-26. S.D. 1,965 ft.
Kentucky O. & G. Co.'s No. 1 Leslie, NW cor. SW NW Sec. 21-9-26 ..... Derrick.

LAFAYETTE COUNTY

George W. Harper's No. 2 Bodcaw, 150 ft. S, 550 ft. E NW cor. SW NW Sec. 16-15-22 ..... S.D. 1,199 ft.

LITTLE RIVER COUNTY

M. E. Sanderson's No. 1 Hale, Sec. 23-13-29 ..... Coring 1,788 ft.

LONOKE COUNTY

Joe D. Strahan's No. 1 Hardin, 300 ft. S and E, NW cor. NW NW Sec. 18-2n-7 ..... Drlg. 650 ft.

MILLER COUNTY

Duluth-Ark. Oil Co.'s No. 2 Beck, 330 ft. S and E, NW cor. SE SW Sec. 34-15-26 ..... S.D.; T.D. 2,807 ft.

OUACHITA COUNTY

F. G. Harrell's No. 1 Poindexter, 330 ft. S and E NW cor. Sec. 35-15-15 ..... Coring 2,262 ft.
J. D. Reynolds' No. 1 Snow Hill Baptist Church, 525 ft. E, 115 ft. S, NW cor. SE SW Sec. 25-15-15 ..... Drlg. cable tools 2,034 ft.

POINSETT COUNTY

Ark. State O. & G. Co.'s No. 1 fee, C NE NE Sec. 13-11-3e ..... Derrick.

UNION COUNTY

E. R. Henderson's No. 2 J. H. Ogden, 330 ft. S and E, NW cor. SW SE Sec. 32-18-14 ..... W.O.S.R. 2,208 ft.
Marine Oil Co.'s No. 2 Union Sawmill Co., 330 ft. S and E, NW cor. SE SE Sec. 3-18-13 ..... Drlg. 1,970 ft.
Chas. Steele's No. 1 J. B. Combs, 150 ft. N, 185 ft. W, SE cor. SW NW Sec. 25-18-15 ..... Rigging up.

WOODRUFF COUNTY

John Wadkins' No. 1 Rosser, Sec. 7-5n-2w ..... S.D. 1,300 ft.

Mississippi

LAMAR COUNTY

Lamar Oil Co.'s No. 1 Scott, NE NE Sec. 18-2n-14 ..... S.D. 3,010 ft.

MADISON COUNTY

H. A. Wilson,tr.'s No. 1 Copex, 200 ft. N and E, SW cor. SW NE Sec. 24-9-3e ..... Drlg. 1,980 ft.

NEWTON COUNTY

Bob Dalton et al's No. 2 Majura, SE SE Sec. 25-6-11 .... Drlg. 2,890 ft.

RANKIN COUNTY

Hill Bros. and Cleve Love's No. 1 Lancaster, C SW NW Sec. 27-5-5e ..... Rigging up.

WALTHALL COUNTY

Mutual O. & G. Co.'s No. 1 Boyd, Sec. 24-2n-9e, SW cor. SW SE ..... Moving in rig.

WARREN COUNTY

Orbet Drlg. Co.'s No. 1 R. L. Parker, 300 ft. E, CWL, Sec. 14-14-1e ..... Drlg. 1,260 ft.

Louisiana-Arkansas Proven Areas

North Louisiana

BOSSIER PARISH

Company, well, farm name, section and block—	Remarks:
United Gas Public Service Co.'s No. 1 Skannell unit, 1,317 ft. N, 1,274 ft. E, SW cor. Sec. 12-17-12	Set 9⅝-in. 2,660 ft.

CADDO PARISH—BETHANY

Calatex O. & G. Co.'s No. 1 Taylor, SW SE Sec. 34-17-16. Drlg. plug 2,710 ft.
Dillingham et al's No. 1 Eady est., 660 ft. S and W, NE cor. SE NE Sec. 33-16-16 ..... Dry and abd. 3,101 ft.

CADDO—RODESSA

R. W. Norton's No. 1-B J. B. French, 660 ft. S and E, NW cor., Sec. 34-23-16 ..... Rigging up.

CADDO—PINE ISLAND

Ark.-La.-Tex. O. & G. Co.'s No. 1 Simon, 330 ft. N and E, SW cor. NW Sec. 15-20-15 ..... S.D. 41 ft.
M. Rodgers' No. 1 Muslow, 700 ft. S, 1,550 ft. W of center Sec. 4-20-15 ..... Comp. pumping 25 bbls., 1,499 ft.

CADDO—HOSSTON

C. D. Whittaker et al's No. 2 Barker, 1,150 ft. N, 1,900 ft. E, SW cor. Sec. 21-22-16 ..... Drlg. 700 ft.

DE SOTO PARISH

Tom McKinney et al's No. 1 J. M. Nabors, 330 ft. N and E, SW cor. SE SE Sec. 26-12-13 ..... Rig up.

SABINE PARISH—ZWOLLE

J. C. Chandler's No. 1 Rains, SW cor. NW Sec. 14-7-11. S.D. 2,508 ft.
Crescent Drlg. Co.'s No. 1-A Billbray, 330 ft. S and E, NW cor. NW NE Sec. 32-8-11 ..... Testing 2,525 ft.
Dyer et al's No. 1 McCollister, 330 ft. S and E, NW cor. SW NE Sec. 24-7-12 ..... Derrick.
Investors Prod. Co.'s No. 1 S. J. Williams, 600 ft. E and S, NW cor. Sec. 24-7-11 ..... Arranging to pump 2,665 ft.
Magnolia Pet. Co.'s No. 2 Gindratt, 330 ft. N, 330 ft. E, SW cor. SE Sec. 30-8-11 ..... T.A. 2,485 ft.
Pelican Nat. Gas Co.'s No. 25 La. Long Leaf, 534 ft. S, 300 ft. E, NW cor. NE NE Sec. 31-8-11 ..... S.D. 2,600 ft.
Pelican Nat. Gas Co.'s No. 21 La. Long Leaf Lbr. Co., 660 ft. N, 568 ft. W, SE cor. SE SW Sec. 5-7-11 ..... Dry and abd. 2,700 ft.
Pelican Nat. Gas Co.'s No. 24 La. Long Leaf Lbr. Co., 330 ft. N and E, SW cor. Sec. 5-7-11 ..... Bailed dry; W.O. 2,750 ft.
Pelican Nat. Gas Co.'s No. 10 Sabine Lbr. Co., 330 ft. S and W NE cor. SE NE Sec. 7-7-11 ..... Set 10-in. 55 ft.; drlg. 3,055 ft.
Pugh-Hickman's No. 8 Stille, 330 ft. S and E, NW cor. Sec. 16-7-11 ..... Set 10-in. 40 ft.
Rig Oil Co.'s No. 1 Walden, 330 ft. N and E, SW cor. NW NE Sec. 28-8-11 ..... Derrick.
C. T. Ruffin's No. 1 Sabine Lbr. Co., 330 ft. N, 80 ft. W, SE cor. NE NE Sec. 7-7-11 ..... Drlg. 2,336 ft.
C. T. Ruffin's No. 1 McNeely, 510 ft. S, 330 ft. W, NE cor. NE NE Sec. 7-7-11 ..... T.A. 2,550 ft.
L. J. Tillery's No. 1 Sabine Lbr. Co., 800 ft. S, 220 ft. W, NE cor. Lot 3, La. Nava grant, Sec. 5-7-11 ..... Rigged up and S.D.
C. H. Tuttle's No. 4 Byrd, 300 ft. S, 920 ft. E, NW cor. NW NW Sec. 7-7-10 ..... S.D. 2,606 ft.

UNION COUNTY

Southern Carbon Co.'s No. 62 fee, 660 ft. S, 660 ft. E of center Sec. 7-20-4e ..... Drlg. 1,762 ft.

Mississippi

HINDS COUNTY

B. B. Jones' No. 1 McRae, 580 ft. W, 540 ft. N, SE cor. SW NW Sec. 24-7n-1w ..... Rigging up.
B. B. Jones' No. 1 Stone, 500 ft. S, 100 ft. E, NW cor. Sec. 18-5n-3e ..... Rigging up.
Love & Lancaster's No. 2 Elton plantation, NE Sec. 9-4-1e ..... S.D. 5 ft.
Meredith Trading Co.'s No. 1 Nelson et al, 630 ft. E, 330 ft. S, NW cor. SW SE Sec. 34-6-1e ..... Reaming 2,431 ft.

RANKIN COUNTY

Ferguson, Fuller & Metz' No. 1 Ammons, 350 ft. E and S, NW cor. NW NW Sec. 35-3n-3e ..... Rigged up.
Cleve Love et al's No. 1 Thomas, SW Sec. 10-4-1e ..... Drlg. 2,120 ft.

EAST TEXAS (Border Counties)

MARION COUNTY

Perry et al's No. 1 E. B. Colgin, 300 ft. N and E, SW cor. Martin Noil Sur. ..... S.D. 1,400 ft.

PANOLA COUNTY

W. H. Nichols et al's No. 1 S. W. Ray, 330 ft. S of N line, 330 ft. W of E line, W. P. Culver Sur. ..... Fishing 1,350 ft.
M. H. Robbins et al's No. 1 Alice Williams, 165 ft. N and E, SW cor. 30-ac. tract in Winnie Mann Sur. .. Coring 2,099 ft.
C. R. Obermeyer et al's No. 1 T. J. Wooten, P. Martin Sur. ..... S.D. 2,110 ft.

Wildcat Operations in Southwest Texas

(Continued from Page 47)

DE WITT COUNTY

C. B. Bunte, Inc.'s No. 1 Emil Buckhorn, SE cor. of 120-ac. tract in Andrew Lockhart Sur., 1 miles SW from Lindeneau ..... T.D. 3,807 ft.; abd.

DUVAL COUNTY

Eaton et al's No. 1 Herbst, 1,650 ft. from E line, 330 ft. from S line in S.A.&M.G. Sur. No 71 ..... Standing.
Gilbert & Clayes' No. 1 Hagist, 330 ft. from N and E lines of Blk. 9, B.S.&F. Sur. No. 265 ..... T.D. 2,175 ft.; coring.
O. W. Killam's No. 3 Wood-Welder, 6,123 ft. from S line, 200 ft. from W line in Sur. No. 102 ..... T.D. 900 ft.; drlg.
O. W. Killam's No. 4 Wood-Welder, 500 ft. from N line, 200 ft. from W line in Sur. No. 102 ..... Rigging up.
G. G. Mortimer's No. 2 Peal, 330 ft. from S and E lines of W½ of Sur. No. 798 ..... T.D. 1,300 ft.; drlg.
W. A. Smith's No. 1 Holzapfel, west central part of lease in 900 ft. W of NE cor. of Sur. 344 and 150 ft. from N line of Sur. No. 42 ..... T.D. 1,500 ft.; drlg.
Trinity Drillers' No. 1 Hagist, 1,650 ft. from S line, 2,310 ft. from E line of B.B.B.&C. Sur. No. 1 ..... T.D. 1,848 ft.; drlg.
Plymouth Oil Co.'s No. 3 Hoffman, 1,650 ft. from NW line, 330 ft. from NE line of Sur. No. 114 ..... T.D. 2,298 ft.; drlg.
Whitting's No. 1 Duval County Ranch Co., 1,511 ft. from S line, 2,143 ft. from W line of Blk. 31, of Sur. No. 196 ..... T.D. 1,502 ft.; standing.

EDWARDS COUNTY

Love and Evans' No. 1 Steve Brown, 660 ft. from N and E lines of Sec. 66, G.W.T.&P.R.R. Sur., 15 miles W of Rock Springs ..... T.D. 2,800 ft.; drlg.; having trouble with wtr.

FRIO COUNTY

Amerada Pet. Corp.'s No. 1 Frank Doering, 34 ft. from W line, 1,700 ft. from S line of Tract No. 7 in Maria Louisa Carranza Sur. No. 302 ..... T.D. 5,915 ft.; drlg.

GILLESPIE COUNTY

Powers et al's (Nixon-Dore) No. 1 Andrew Lindig, 18 mi. E of Fredericksburg ..... T.D. 1,194 ft.; fishing.

GONZALES COUNTY

Volz & Shelling's No. 1 Bennett Botts et al, 150 ft. from W line, 800 ft. from N line of 420-ac. tract, lease in Gonzales Sur. ..... T.D. 500 ft.; drlg.

GUADALUPE COUNTY

A. F. Barnhill's No. 3 F. A. Phillman, 1,300 ft. from N line, 152 ft. from E line of lease in L. Bollinger Sur. ..... Moving in rig.
Potter et al's No. 1 Greenwood est., 470 varas from W line, 940 varas from NW line of Archibold Gibson Sur. ..... Derrick.
L. E. Trout's No. 1 Mrs. M. McKee, 650 ft. from W and 150 ft. from N line of 239-ac. tract in Green Dewitt Sur., 4 miles SW from Darst Creek ..... Moving in rig.

JIM HOGG COUNTY

D. C. DeWitt's No. 1 A. G. Lopez, 3,475 ft. from W line, 425 ft. from N line of Sur. No. 106 ..... T.D. 2,515 ft.; abd.
Brooklyn Oil Co.'s No. 1 De La Garza, 660 ft. from N and W lines of Blk. 87 of Pippins Subd. of Randado Grant Sur. ..... T.D. 2,756 ft.; abd.; dry.

JIM WELLS COUNTY

Plymouth Oil Co.'s No. 1 Cuero Cattle Co., 330 ft. from S and W lines of H.T.&B. Sur. No. 7, 2½ miles W from Alfred ..... Rigging up.
Trinity Drillers' No. 1 Seeligson, 330 ft. from N and E lines of Sec. 71, of R. P. Haldeman Subd., and in S.K.&K. Sur. No. 215 ..... T.D. 2,312 ft.; drlg.

KARNES COUNTY

Arrowhead Drlg. Co.'s No. 1 Rudd, 1,320 ft. from S and E lines of 524-ac. tract in Adriance Sur. ..... T.D. 1,982 ft.; standing in shale.
Dash Prod. Co.'s No. 1 Ruhmann, 525 ft. from W line, 150 ft. from N line of lease in J. M. Thurston Sur., Blk. 7, Butler Subd. of Medio ranch ..... Spudded in.
C. J. Webster's No. 1 J. B. Cannon, 1,140 ft. from N line, 250 ft. from E line of 80-ac. tract in Lambrano Sur. ..... T.D. 1,645 ft.; drlg.

KENDALL COUNTY

W. E. Waldrip's No. 1 Charles Meckel, 300 ft. from E line, 3,300 ft. from S line of Thos. J. Sweeney Sur. No. 10 ..... T.D. 365 ft.; standing.

KERR COUNTY

J. E. Anderson's No. 1 J. D. Witt, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 1923, in Hamilton Sur., 4 miles S of Center Point .. .. T.D. 1,885 ft.; standing in shale and sand.
Van Duyn & Moore's No. 1 Nowlin, 2,000 ft. from E line, 2,200 ft. from N line of Jas. R. Bettner Sur. No. 99 ..... T.D. 1,040 ft.; drlg shale.

LA SALLE COUNTY

Equity Oil Co.'s No. 1 Rogers, 202 ft. from E line, 455 ft. from S line of lease in Atascosa County School Land Sur. No. 300 ..... T.D. 310 ft.; moving in heavier rig.

W. H. Wallace's No. 1 H. C. Yeager, 150 ft. from S and E lines of Sur. No. 95 ..... T.D. 2,205 ft.; standing.

LIVE OAK COUNTY

J. H. Durbin's No. 2 Marbach, 1,000 ft. from S line, 3,200 ft. from W line of S. Hays Sur. ..... T.D. 904 ft.; abd.

M. P. Howard's No. 1 Alexander, 2,700 ft. from N line, 150 ft. from E line of 500-ac. tract 3 miles NE of Calliham ..... T.D. 1,222 ft.; abd.; hole jumped; may be comp. as wtr. well.

S. B. Hood's No. 1 Byler, 150 ft. from NW and NE lines of Sur. No. 91 ..... Derrick up and slush pits dug.

McMULLEN COUNTY

Armoil Prod. Co.'s No. 1 Kate Martin, 1,470 ft. from SE line, 1,470 ft. from SW line of H.T.&B. Sur. No. 9 ..... Spudded in.

Paul C. Teas' No. 3 Hagist, 330 ft. from N and W lines of Sec. 19 ..... T.D. 1,780 ft.; drlg.

Paul C. Teas' No. 1 Hagist, 330 ft. from N and E lines of Sec. 181, 10 miles N from Government Wells.... T.D. 2,019 ft.; abd.; dry.

Pitkin-Goldston Oil Co.'s No. 1 Hagist, 330 ft. from N line, 900 ft. from E line of G. B. McKinney Sur. No. 467 ..... T.D. 900 ft.; drlg.

MEDINA COUNTY

O. R. Framme's No. 1 E. Boelke, 987 ft. from N line, 600 ft. from E line of 102-ac. tract in S. Huth Sur. No. 10 ..... T.D. 245 ft.; drlg.

MILAM COUNTY

Ed Clark et al's No. 1 Thomas Graves, 150 ft. from SW and NW lines of Jackson Hall Sur. ..... T.D. 890 ft.; abd.; dry.

B. F. Robinson's No. 1 W. M. Caffey, 150 ft. N and E. of SE cor. of B. P. Duncan Sur. in SW cor. of 50-ac. Caffey tract in J. Bright Sur. ..... Rigging up.

NUECES COUNTY

Banquette Oil Co.'s No. 1 T. C. Ingram, 330 ft. from N and W lines of 80-ac. tract, Blk. 6, Sec. 7, of S. R. Peters Sur. ..... T.D. 4,879 ft.; running tubing.

Benecum & Trees' No. 1 J. O. Pickham, 1,812 ft. to S line, 400 ft. E of 204-ac. tract in G. Faris Sur. .... T.D. 3,675 ft.; drlg.

A. C. Erwin's No. 1 Sagarin, 520 ft. from N, 160 ft. from E line of 35-ac. tract in Sec. 4, H. L. Kenney Sur. ..... T.D. 4,408 ft.; drlg.

S. F. Hurlbut and Southwest Oil Co.'s No. 1 Poenisch, center Blk. 2, Sec. 32, Flowerbluff & Encinal farm. 4 miles S from Corpus Christi ..... T.D. 4,000 ft.; drlg.

Texon Royalty Co.'s No. 1 E. McCoy, 330 ft. from W line, 3,830 ft. from S line, Sec. 3, of Palo Alto Sur., 6 miles SE from Agua Dulce ..... T.D. 5,003 ft.; abd.; dry.

STARR COUNTY

Accumulative Royalty Co.'s No. 1 Martinez, 800 ft. from S line, 500 ft. from W line of C.C.S.D.&R. G.N.G. Sur. No. 217 ..... T.D. 1,370 ft.; drlg.

Goodwin & Yantis' No. 3 Kelsey Bass, 150 ft. from S and E lines of Blk. 8, Coast O. & G. Subd. of Secs. 3 and 4, Porcions 86-87 ..... T.D. 1,040 ft.; standing.

Goodwin and Yantis' No. 2 Walker, 3,000 ft. from S line, 2,000 ft. from W line of Sur. No. 767 ..... T.D. 2,400 ft.; no report.

Myers, Sullivan & Jenkins' No. 1 Starr County Cattle Co., 330 ft. from N line, 330 ft. from W line, Blk. 62, Porcion 89, Share 60 ..... T.D. 1,957 ft.; drlg.

R. D. Perkins & Hoffman's No. 1 E. A. Peffler, 3,090 ft. from W line, 2,480 ft. from S line of Sur. 933.. T.D. 80 ft.; standing.

TRAVIS COUNTY

Franklin et al's No. 1-A Reimers, 1,200 ft. from SE line, 1,600 ft. from most southerly SW line of Sur. No. 35 ..... T.D. 910 ft.; drlg.

Fritz Fuch's No. 2-B Smith est., 900 ft. from NW line, 300 ft. from W line of Blk. 16, L. Kimbro Sur. .... Rigged up and standing.

Weaver & Osborn's No. 1 Will Reinhardt, 300 ft. from NW line, 1,200 ft. from NE line of Will Reinhardt 100-ac. tract in William Lewis, Jr., Sur. 2.... T.D. 248 ft.; standing.

WEBB COUNTY

Frank Garvis' No. 1 Yeager-Stroman, 200 ft. from S line, 450 ft. from E line of Share 5 in Los Animas grant ..... T.D. 1,685 ft.; drlg.

Will Ohlhausen's No. 1 Moses Jones, 273 varas from E line, 516 varas from S line of 100-ac. tract in Sur. No. 1,640 ..... T.D. 850 ft.; dropped till work is resumed.

WILLIAMSON COUNTY

Alexander Drlg. Co.'s No. 1 J. & G. Kreig ..... T.D. 1,550 ft.; fishing.

Humble O. & R. Co.'s No. 1 Burns est., 325 varas from NW line, 1,495 varas from SW line of J. West Sur.. T.D. 1,636 ft.; drlg.

McLean et al's No. 2 R. C. Miller, 800 ft. to S line, 100 ft. to W line of tract, B. Manlove Sur. ..... T.D. 2,265 ft.; standing.

Pederson's No. 1 Forwood, 900 ft. from N and 1,200 ft. from E line of 160-ac. tract in Fisher Sur. ..... T.D. 950 ft.; no report.

ZAPATA COUNTY

F. G. Delaney's No. 1 Leonard Haines estate, 330 ft. from SE line, 2,970 ft. from SW line of Villa Grant Sur. ..... Derrick.

J. C. O'Haver's No. 1 Bustamente, 330 ft. from N and E lines of 24-ac. tract in Share 24 of Las Comitas grant ..... T.D. 1,600 ft.; drlg.

Circle W. Oil Co.'s No. 1 M. Garza est., 623 ft. from NW line and 699 ft. from SW line of Blk. 30, C. A. Douglas Subd. of Charco de la India grant ..... T.D. 1,742 ft.; standing.

J. P. Doyle's No. 1 I. Ramires, 150 ft. from NW and SW lines of Blk. 15, Share 1, Porcion 18 ..... Spudded in and S.D.

Sarah Poppas' No. 1 Juan V. Cueller, Jr., 150 ft. from NE and SE lines of Blk. 3, Sur. 3 of Poppas Subd. of Por. 34 ..... T.D. 770 ft.; standing.

A. C. Savoy et al's No. 1 Flores, 150 ft. from NW line, 306 ft. from NE line of Blk. 8, Share 1 of P. A. Richer Subd. of Porcion No. 36 ..... T.D. 2,404 ft.; abd.; hole lost.

Arthur H. Wray's No. 3 Gopher Trust Estate, 660 ft. from SW line, 330 ft. from SE line of Blk. 13, Sur. 1, Fullerton Subd. of Share 9 ..... T.D. 210 ft.; drlg.

ZAVALA COUNTY

Anglin O. & G. Co.'s No. 6 Pryor ..... T.D. 1,115 ft.; standing; shows S.W.

Southwest Texas Proven Areas

Week Ending November 18

SCHIMMEL POOL—BASTROP COUNTY

Marts & Beavens' No. 1 C. A. Smith, 700 varas from SE line, 1,150 varas from NE line of C. A. Smith 415-ac. tract in James Bialock Sur. No. 7 ..... T.D. 1,612 ft.; showing few ft. of oil.

NORTH DALE POOL—BASTROP COUNTY

Ogden & Reed's No. 2 Tally, SE cor. of tract in J. Gray Sur. ..... T.D. 2,255 ft.; tested S.W. and a little oil.

Ogden & Reed's No. 1 Spradlin, 300 ft. from S line, 200 ft. from E line of 113-ac. tract in Grey Sur .Rigged up; standing.

PETTUS POOL—BEE COUNTY

United Prod. Co.'s No. 3 Ray, 3,388 ft. from N line, 958 ft. from E line of Moore Sur. ..... T.D. 6,054 ft.; W.O. job; being P.B. to Pettus sand at 4,054 ft.

ECKERT POOL—BEXAR COUNTY

F. H. Eckert & Son's No. 3 Louis Brehm, 550 ft. from W line, 150 ft. from S line of 93-ac. tract in P. L. Buguor Sur. ..... Drlg.

F. H. Eckert & Son's No. 4 August Brehm, 250 ft. from E line, 300 ft. from N line of tract in Buquor Sur. ..... T.D. 300 ft.; deep test.

Gatlin Oil Co.'s No. 17 Mrs. Ida Beck, 565 ft. from NE line, 150 ft. from SE line of tract in Juan Montez Sur. ..... Spudded in.

I. F. Harrison's No. 1 F. Gembler, 150 ft. from NW line, 460 ft. from NE line of 88-ac. tract in J. Montez Sur. ..... T.D. 675 ft.; standing.

DUNLAP POOL—CALDWELL COUNTY

Bob Rose's No. 1-B J. M. Price, 150 ft. from NE and SE lines of J. M. and O. Pierce 100-ac. tract in S. Seal Sur. ..... T.D. 2,080 ft. in chalk.

WEBSTER POOL—CALDWELL COUNTY

C. J. Webster O. & G. Co.'s No. 2 McCroy, 750 ft. from S line, 150 ft. W of NE cor. of tract in John A. Neill Sur. ..... T.D. 150 ft.; set surface csg.

EAGLE HILL POOL—DUVAL COUNTY

Al Buchanan's No. 2 Duval County Ranch Co., 1,650 ft. from E line, 330 ft. from S line of S½ of N½ of Sur. No. 206 ..... T.D. 1,300 ft.; starting to core.

Al Buchanan's No. 1 Foster, 330 ft. from N line of S½ of Sur. 206, and 330 ft. from E line of lease ..... Spudded in and set surface csg.

R. D. Kelley's No. 2 Foster, 1,650 ft. from E line of survey, and 990 ft. S of N line of S½ of Sur. No. 206. T.D. 1,250 ft.; drlg.

Texas Co.'s No. 5-A Duval County Ranch Co., 330 ft. from S line, 1,650 ft. from E line of N½ of N½ of Sur. No. 206 ..... T.D. 1,497 ft.; rerunning tubing; shows very little pressure.

NORTH DALE—CALDWELL COUNTY

Witherspoon Oil Co.'s No. 1 J. W. Mears, 330 ft. from SW line, 350 ft. from SE line of Wm. Leach Sur. .. T.D. 2,346 ft.; dry and abd. in chalk topped at 2,248 ft.

BUCHANAN POOL—DUVAL COUNTY

R. D. Kelly's No. 1 Foster, 330 ft. from N line, 1,650 ft. from E line of S½ of Sur. No. 206 ..... T.D. 1,498 ft.; flowing 220 bbls. daily on ¼-in. choke with 60 lbs. pressure.

NORTH KOHLER POOL—DUVAL COUNTY

Highland and Shasta's No. 2-D Peters, 660 ft. W of No. 1-D Peters, or 1,650 ft. from E line, 330 ft. from N line of Strip Sur. No. 65 ..... T.D. 1,739 ft.; in sand 1,736-39 ft.; gas; drilling in.

NORTH GOVERNMENT WELLS POOL—DUVAL COUNTY

Central Producers' No. 8 Tuck-Johnson, 330 ft. from N and W lines of NW NW of Sur. No. 44 ..... T.D. 2,312 ft.; comp. 30 bbls. hrly.

Humble O. & R. Co.'s No. 22 Hahl, 1,046 ft. from S line, 339 ft. from W line of Sur. No. 74 ..... Spudded in.

Humble O. & R. Co.'s No. 19 Hahl, 3,670 ft. from S line, 990 ft. from W line of E½ of Sur. No. 360.... T.D. 2,304 ft.; comp. 35 bbls. dly.

Humble O. & R. Co.'s No. 20 Hahl, 4,350 ft. from S line, 990 ft. from W line of E½ of Sur. No. 360.. T.D. 2,298 ft.; comp. 40 bbls. hrly.

Humble O. & R. Co.'s No. 22 Hahl, 1,762 ft. from S line, 330 ft. from W line in Sur. No. 74 ..... T.D. 2,320 ft.; set csg.; W.O.C.

Magnolia Pet. Co.'s No. 5 Duval County Ranch Co., 330 ft. from S line, 2,310 ft. from W line of Sur. No. 208.. T.D. 2,216 ft.; comp. 6 bbls. hrly.

Magnolia Pet. Co.'s No. 6 Duval County Ranch Co., 330 ft. from S and E lines of Sur. No. 208 ..... T.D. 2,325 ft.; comp. 300 bbls. hrly.

Magnolia Pet. Co.'s No. 3 Lundell, 330 ft. from S line, 150 ft. from W line of SE of Sur. No. 60..... T.D. 1,900 ft.; drlg.

Navarro Oil Co.'s No. 23 Hahl, 1,650 ft. from N line, 990 ft. from E line of W½ of Sur. No. 360 ..... T.D. 2,294 ft.; comp. 40 bbls. hrly.

Navarro Oil Co.'s No. 31 Hahl, 990 ft. from N and W lines of W½ of Sur. No. 360 ..... T.D. 2,295 ft.; comp. 15 bbls. hrly.

Reynosa Oil Corp.'s No. 6-A Duval Ranch Co., 330 ft. from N and E lines of N½ of SW of Sur. No. 362.. Location.

Reynosa Oil Co.'s No. 2-D Duval County Ranch Co., 330 ft. from S and W lines of S½ SW Sur. No. 362.. Rigging up.

Russ Oil Co.'s No. 3-A C. W. Hahl, 330 ft. from N and W lines of NE SW of Sur. No. 46 ..... T.D. 2,354 ft.; abd.; dry.

Sun Oil Co.'s No. 9 Weiderkehr, 990 ft. from N line, 300 ft. from E line of Sur. No. 359..... T.D. 475 ft.; drlg.

Sun Oil Co.'s No. 13 Weiderkehr, 1,650 ft. from N line, 330 ft. from E line in Sur. No. 361..... T.D. 350 ft.; drlg.

Sun Oil Co.'s No. 12 Weiderkehr, 990 ft. from E line, 330 ft. from N line of Sur. No. 361 ..... T.D. 1,400 ft.; drlg.

Sun Oil Co.'s No. 10 Weiderkehr, 990 ft. from N line, 330 ft. from E line in Sur. 361 ..... T.D. 2,286 ft.; comp. 35 bbls. hrly.

Texas Co.'s No. 6 W. C. Rigg, 330 ft. from S and W lines of E½ NW of Sur. No. 46 ..... T.D. 2,291 ft.; drilling in.

Texas Co.'s No. 1 fee, 990 ft. from N line, 330 ft. from W line of SE of Sur. No. 362 ..... T.D. 2,295 ft.; set csg.; W.O.C.

SOUTH GOVERNMENT WELLS POOL—DUVAL COUNTY

Humble O. & R. Co.'s No. 13 Paul White, 2,300 ft. from E line, 300 ft. from N line of Sur. No. 249..... Rigging up.

Humble O. & R. Co.'s No. 12 Paul White, 1,650 ft. from S and E lines of Sur. No. 249 ..... T.D. 2,288 ft.; flowing by heads; small well.

S. R. C. POOL—DUVAL COUNTY

S. R. C. Oil Co.'s No. 10 Duval County Ranch Co., 100 ft. from S line, 1,153 ft. from E line of Sur. No. 295. Derrick.

NEW BERLIN POOL—GUADALUPE COUNTY

J. A. Harper's No. 2 Rosenbrook, 660 ft. SW of No. 1.. T.D. 225 ft; set 10-in. csg.; W.O.C.

JACOBS POOL—McMULLEN COUNTY

Loma Oil Co.'s No. 18-A Jacobs, 660 ft. S of No. 11, in W. H. Jacobs Sur. No. 8 ..... Derrick.

Longhorn Oil Co.'s No. 3-A Lark, 450 ft. from N line, 150 ft. from W line of Blk. 14, of Subd. of Lark land in E. W. B. Scrugham Sur. ..... T.D. 1,030 ft.; C.O.

Kennon & Stephenson's No. 1 Lark, 150 ft. from N and W lines of Blk. 15, subd. of Lark land in E. W. B. Scrugham Sur. ..... T.D. 1,033 ft.; set csg.; W.O.C.

CUEVITAS POOL—STARR COUNTY

Mims, Hamill & Evans' No. 1 M. Guerra, 330 ft. from E line, 330 ft. from S line of Share M-10, in Las Cuevitas grant ..... Rigging up.

Sun Oil Co.'s No. 2-B Guerra, 1,320 ft. from SW line, 660 ft. from SE line of Share H-14-B, in Las Cuevitas grant ..... T.D. 1,998 ft.; drlg.

Sun Oil Co.'s No. 1-D Guerra, 6,353 ft. from NE line, 3,300 ft. from SE line of La Sacatosa grant ..... Rigging up.

Sun Oil Co.'s No. 6-A Guerra, 1,320 ft. E of No. 7-A and on 1,360-ac. tract, or 1,980 ft. to NW, 3,300 ft. to SW of No. 14-B in Las Cuevitas grant ..... T.D. 3,042 ft.; drlg.

CAROLINA-TEXAS POOL—WEBB COUNTY

Carolina-Texas Oil & Gas Trust's No. 11 Benavides, 150 ft. from S line, 600 ft. from W line of Blk. 12 in Sur. No. 633 ..... T.D. 1,800 ft.; drlg. gas.

BYERSVILLE POOL—WILLIAMSON COUNTY

Fritz Fuch's No. 1 C. W. Johnson, 600 ft. from SE line, 700 ft. from NE line of tract in P. Cartwright Sur. ..... Derrick.

Taylor Prod. Co.'s No. 3 Zeischang, 250 ft. N of creek, 200 ft. from NE line of tract in H. White Sur. T.D. 865 ft.; testing.

ESCOBAS POOL—ZAPATA COUNTY

Texas Co.'s No. 34 Whitehead, 2,686 ft. from SE line, 19,980 ft. from SW line of Cerrito Blanco Sur. .... T.D. 1,186 ft.; set csg. W.O.C.

W. E. West and J. P. Perry's No. 1 Garcia, 1,200 ft. from NW line, 200 ft. from NE line of Share 3 of Comitas grant ..... Derrick.

JENNINGS POOL—ZAPATA COUNTY

United Prod. Corp.'s No. 11 Measles, 3,483 ft. from NW line, 16,500 ft. from SW line of Cerrito Blanco grant ..... T.D. 4,210 ft.; reaming.

MARTINEZ POOL—ZAPATA COUNTY

W. R. Shankle and Wm. McGinley's No. 1 Manuel T. Heira, 330 ft. from E line, 300 ft. from S line of Blk. 16 in Sur. No. 411 ..... T.D. 1,150 ft.; drlg.

United Prod. Co.'s No. 2 Henne-Winch, 660 ft. from S line, 150 ft. from W line of Blk. 8, Sur. No. 286.... T.D. 200 ft.; drlg.